



**DELHI UNIVERSITY
LIBRARY**

DELHI UNIVERSITY LIBRARY
Cl. No. S : 62 ' HO

Date of release for loan

Ac No. 29688

This book should be returned on or before the date
last stamped below. An overdue charge of one
anna will be charged for each day the book is kept
over time

THE INNUMERABLE INSTINCTS OF MAN

By the same Author:

Books on Psychology

THE "CHEMISTRY" OF THOUGHT
INTELLIGENCE AND MENTAL GROWTH

Pamphlets on Education

CHILD'S PARADISE
GOOD NEWS FOR TEACHERS
EDUCATION OF THE WILL, ETC

A Book on Engineering for Children

SPANNING SPACE

THE INNUMERABLE INSTINCTS OF MAN

BY

CLAUDE A. CLAREMONT

B Sc (LON), A C G I

(*Co-Principal, Montessori Training College for Teachers, London*)

*A Proposed Revision of the
Current Theories of Instinct
in the Light of Modern
Research*

1940

• EYRE AND SPOTTISWOODE
LONDON

MADE AND PRINTED IN GREAT BRITAIN FOR
FYRE AND SPOTTISWOOD (PUBLISHERS) LONDON

PREFACE

by

H. R. HAMLEY, M.A., M.Sc., PH.D.

Professor of Education in the University of London

THE subject of instinct has aroused more controversy in recent years than almost any other in psychology. Even the heated disputations that have raged round the theories of psycho-analysis have had as their focal point Freud's conception of instinct. The disputants range from those who, following the behaviourists, deny the existence of instinct altogether, to those who maintain that man's "unlearned responses" are so numerous as to be almost legion. William McDougall, in his last systematic discussion of this subject, sought to avoid confusion of his own ideas with those who used the term "instinct" loosely by using the word "propensity" instead. Some psychologists have regretted this change, but it must be admitted that for some purposes the word "propensity" has its uses.

Again, workers in clinics for maladjusted children are in the habit of speaking of the child's "psychological" needs. If, for example, the child is unduly anxious, or, perhaps, unduly aggressive, they will ask themselves Has his need for affection or security or free development been satisfied? What they mean, as Mr Claremont has shown in this book, is Has the child's instinctive urges and demands in these directions been met?

Mr Claremont possesses several essential qualities expected in a writer on the subject of instinct. He has had a careful scientific training, he has had, too, training in psychological methods not only in this country but also in Rome, under De Sanctis. Moreover, he has the training that comes through years of

PREFACE

experience as a close observer of children and as an expositor of Montessori methods. *The Innumerable Instincts of Man* is the third of a series of books giving the results of his own thought on fundamental psychological concepts.

In a brief Preface it is not possible to indicate all the topics of interest or the challenging ideas in this book. Mr. Claremont's discussion of "developmental instincts" is, perhaps, his most valuable contribution, as it leads to a subject of vital importance in education. Freedom for development is, of course, no new doctrine, but whereas writers in the past have approached the problem largely from the moral standpoint, Mr. Claremont has approached it from the psychological. For the moment he is more concerned with the child's instincts and psychological needs than with his rights; he is more concerned with their happiness than with their prerogatives. To our clinics come many unhappy children. Some are unhappy because they lack natural affection or because their world is very insecure; others, perhaps more, are unhappy because they have fallen behind in intellectual things. Truly it has been said that a firm grasp of the fundamentals of knowledge is the corner-stone of mental health in children. It is Mr. Claremont's belief, a belief that is shared by those who belong to the Montessori school of thought, that the failures that lead to backwardness in school work may in many cases be prevented by providing the right material and instruction at each stage of the child's development.

I have selected for comment one topic among many that Mr. Claremont has presented for consideration. The whole thesis, however, merits the attention of teachers and others who are interested in understanding human nature.

CONTENTS

CHAP.	PAGE
Preface by Professor Hamley, M.A.	7
Introduction by Dr. P. B. Ballard, D. Litt.	9
Author's Note	11
I. A Scientist's Profession of Scientific Faith	13
II. Animals to the Rescue	25
III. Why Not Reflex?	45
IV. The Innumerable Instincts of Man	55
V. Developmental Instincts	63
VI. Perversion: Instinctive or Intelligent?	91
VII. How Instinct is Aided by Intelligence	101
VIII. Are there Different Kinds of Intelligence?	115
IX. The True Instincts of Human Reproduction	127
X. The Social Instincts of Man	151
XI. Instinct and Religion	159
XII. Emotion, Ceremony and Decoration	177
XIII. The Transformation of Social Psychology	189

INTRODUCTION

by

P. B. BALLARD, M.A., D.LITT.

Ex-Inspector, Education Department, London County Council

IN this noteworthy book Mr. Claremont stoutly challenges the current theories of instinct, and puts forward views which are certainly novel, and are, to me at any rate, both convincing and illuminating.

He contends not only that the instincts of man are more numerous than those of any species of lower animal—including the insects!—but also that they are no less specialised and detailed. He thus rejects the ordinary view that human instincts are vague and indeterminate. He moreover pleads for the recognition of a new group of instincts which he designates developmental. Their purpose is to foster the development of the whole person, his mind as well as his body. The author contends that it is just as instinctive for a child to engage in mathematics, or in the detailed study of his language, as it is for him to eat, to seek the company of his fellows, and, in the fullness of time, to fall in love. And these intellectual activities cannot adequately be explained by referring them to a vague instinct of curiosity or of constructiveness. He enforces his plea by showing that impulses to learn things at school have all the essential marks which (he holds) we must now recognise as characteristic of instincts. The bearing of this doctrine on the theory and practice of education is clearly brought out by the author; and it is abun-

INTRODUCTION

dantly shown that the doctrine receives ample confirmation from the success of Montessori methods of teaching.

Mr. Claremont is singularly happy in his exposition of the fact that instinct operates not as a single act, but as a chain of acts, which we may label A, B, C, etc. The achievement of A serves as a cue to the commencement of B, the achievement of B to the commencement of C, and so on to the end of the series. Each link in the chain has its own smaller purpose, all leading to the fulfilment of the larger purpose for which the whole chain exists. And within each link there is room for intelligence to work. We cannot, therefore, draw a sharp line of distinction between the actions of sentient beings, calling one group intelligent and the other instinctive. Every action which is not reflex is a mixture of intelligence and instinct. The author, in fact, extends the territory which each of these factors occupy, and at the same time makes clear and definite the relationship between them.

These are some of the ways in which Mr. Claremont dissipates the fog which surrounds the question of instinct and brings into sharp outline the essential features of the problem. And the solution he offers is a contribution to the theory of instinct which merits the close attention of professional psychologists.

I therefore heartily commend this book to all who are interested in human nature, and especially to those who expect a knowledge of psychological principles to help them in the task of educating the young.

AUTHOR'S NOTE

IN thanking Professor Hamley and Dr. Ballard for their very kind contributions to this book, I want to add a word as to its true object, which is not to promulgate some particular or striking thesis, but to revise the whole status and position of instinct in the light of modern discovery. The title which appears on the cover—chosen out of many possible titles—is quite secondary to this aim, and it refers, in fact, to only one of the conclusions of the book.

(Always supposing that psychologists consider them worthy of notice) these conclusions are likely to be attacked. As Professor Hamley indicates, much controversy in this sphere has always raged round the meaning of words, and I am glad he mentions McDougall's substitute-word for instinct, the word "propensity"—a kind of bomb-proof shelter to which McDougall retired later in life—for this gives me the opportunity to say that while every instinct may conceivably be called a propensity, it by no means follows that every propensity is an instinct. The cannibal has a propensity to eat missionaries. A neurotic "compulsion" to murder one's great-aunt, to steal trifles, or to keep on washing one's hands, may well be called a propensity; but not only is it not an instinct, but no human instinct (functioning normally) is ever "compulsive." It is a peculiar characteristic of the psychology of normal man that every one of his instincts can be resisted; and this I take to be the origin of that fundamental doctrine upheld by

AUTHOR'S NOTE

theologians under the name of free-will—a doctrine, accordingly, which one can separate from abstract discussions and regard merely as a statement of psychological fact.

I am also glad that Professor Hamley makes mention of "unlearned responses," a phrase still more often used as a means of escaping the necessity of discussing instinct at all. Whether responses of any kind can justly be called "instincts" I shall leave to the judgment of the reader, since this question is amply discussed in my chapter, "Why not Reflex?" If the movements of man (and of all forms of life) are nothing but "responses to stimulus," then those peculiar movements popularly called instinctive must also be responses to some kind of change in the outer environment. But an increasing number of observers are to-day maintaining that man is by no means a slot-machine, although it is true that he carries about with him a number of slot-machines attached to his person. The task of psychology is to distinguish between those of his actions which are truly responses, mechanically made to the impacts of appropriate stimuli, and those which pour out of him willy-nilly, merely adapting themselves to their environmental conditions. A tap is a response-mechanism, but an up-rushing spring of water is no tap; and not only this, but its appearance on the earth preceded the appearance of taps by many æons. There is a strong case for the view, not only that instincts are different from reflexes, but that from the evolutionary standpoint they appeared before reflexes.

This being so, I have not hesitated to retain the

AUTHOR'S NOTE

word "instinct", trying merely to define its true boundaries, and to show where it differs from reflex mechanisms and from the "compulsions" and cravings so fully studied recently by psycho-analysis. But even when such separation has been made it still remains a fact that the instincts of man (like his reflex responses or his morbid cravings) are exceedingly numerous, and this discovery is, perhaps, the most striking novelty that results from my treatment. To say that man's tendencies are legion, or that his "unlearned responses" are legion, is nothing new. But to say that his instincts, *as well as his responses*, are legion, is not only very new indeed, but it places the whole subject on a better footing.

Much as I deplore any kind of combat, and the self-assured tone that any combatant must necessarily take, and although I like still less to be drawn into the combative attitude before any combat has begun, I nevertheless think it necessary to emphasise this, since otherwise I may be accused of a plagiarism to which my choice of title lays me peculiarly open

CHAPTER I

A Scientist's Profession of Scientific Faith

A PERIOD in which every psychologist has his own private definition of instinct may seem unpropitious for attempting a complete revision of the subject. On the other hand, this very circumstance must make revision all the more desirable, could it be done with success.

Nowadays much new material is to hand, material unavailable when the classic works on instinct were written; and this makes an attempt not only desirable, but justifiable—by which I mean that all scientific theories are based upon fact, or should be, and the presence of new fact demands fresh thinking. Gone are the days of thought *per se*. Those were the palmy days of *a priori* philosophy. To-day observation comes first, thought second. Not that philosophical thinking has no importance; on the contrary, a man's philosophy of life is the ground on which he walks; but philosophy has to keep on assimilating the fresh observations of fact which are made from year to year.

The idea of observation, of course, *includes* the idea of *experimentation*, and also of *measurement*. These are both just *refined forms of observation*. Experiment is for *events*, and measurement for *things*. Not, of course, that events cannot sometimes be measured as well as things, but not all events can be measured. Dreams, for example, elude both *experimentation* and *measurement*. In cases like this, we just have to do the best we can. For the modern method is to base all inference on observation—never on pure guess-work. The

THE INNUMERABLE INSTINCTS OF MAN

modern psychologist does not say, "Suppose you were to dream so-and-so"; he says, "The patient reported such and such a dream." From facts ascertained thus is the modern knowledge of mind built up.

An "experiment" is the artificial production of an *event*, done so as to observe it the better. One tries to produce it, not only under conditions favourable for observing it, but under conditions in which it *can tell no lies*. The presence of unknown factors might cause it to lie. They prevent one from knowing what is the cause of which. Consider the chemist with his test-tube. He wants to know the effect of a certain acid on a certain metal. What does he do? He makes sure that his acid is pure, and his metal is pure, and he mixes them in a perfectly clean tube. The same fizzing as he now sees would also have taken place in a dirty tube with impure materials, but he would not then have been able to say, "This fizzing is due to an interaction between this particular kind of metal and this particular kind of acid," for it might have been due to the presence of something else.

In the same way, conditions can sometimes be rigged up by which indisputable conclusions can be drawn about living creatures. Edgar Chance,¹ by diligently searching, was able to find all the nests in a given area in which a certain cuckoo could possibly lay her eggs. He was thus able to discover that she laid on alternate days, and by destroying on a given day all the suitable nests but one, he was able to predict where she would lay, and catch her in the act. The event was not here produced artificially;

¹ "The Cuckoo's Secret."

A SCIENTIST'S PROFESSION OF SCIENTIFIC FAITH

nevertheless, the precautions taken permitted reliable observation, and a method like this would often be called "experimental." Sometimes the word "positive" is used.

All observations made in this kind of way are called scientific observations; and, clearly, they differ from ordinary observations. Facts disclosed by them are called scientific facts, and theories derived from these facts are called scientific theories. The whole resulting body of theory and fact is called scientific knowledge, and although it has a certainty no greater than the accuracy of its observations (and of the reasoning based on them), nevertheless it has a certainty considerably greater than that of knowledge derived more casually.

The above statements may sound a trifle elementary and therefore superfluous, but they constitute really a kind of "profession of scientific faith." This is rendered necessary because considerable dissension exists to-day, even among scientists, as to the true nature of science and of scientific knowledge. Some hold that it is just "an ordering of sense-impressions,"¹ others that it is "organised common sense," others that it consists exclusively of measurement, or exclusively of experimentation; that it demands classification, that it must lead to general truths, or that it must be a mixture of these ingredients. Still others maintain that no fact is a scientific fact unless it be a materialistic fact—something that can be weighed and measured.² And others that the first thing a

¹ See "The Grammar of Science," by Karl Pearson

² See Joseph Needham, "Man a Machine"

THE INNUMERABLE INSTINCTS OF MAN

scientist must do is to make up his mind firmly and for ever that everything we know, including ourselves, is made up entirely of matter and motion, in terms of which it is the sole objective of science to express it.¹

I believe historians are beginning to appreciate the fact that every historian is bound to write with a certain amount of bias; that is to say, he will interpret history in one way or another in accordance with his own fundamental beliefs. In the absence of any possibility of resolving ultimate and different beliefs into one common and single belief, some are hoping that historians will one day be sufficiently honest to confess each his own particular bias at the beginning of every book he writes.

Till scientists are agreed as to what they mean by science, it seems obvious that they should do the same. The beliefs which each holds about science are held with the intensity of religious convictions. They evidently derive a force from sources other than intellectual. They influence the conclusions of their holders, especially in the field of psychology. Meanwhile the unsuspecting public regards science as science, and psychology as psychology, just as it does history as history. It takes no sides because it does not know there are any.

My own view (held with a fervour second to none) is that scientific knowledge is knowledge gathered in a particular kind of way. Whether this knowledge will turn out in the end to be all materialistic remains to be seen. To say beforehand that it must do so

¹ See scientific materialism generally! Pavlov favours it.

A SCIENTIST'S PROFESSION OF SCIENTIFIC FAITH

seems to me rather like posing as a friend of the Creator; it is to behave a bit like Freud, when in a somewhat authoritarian declaration, he asserted that sex was "intended to be used for pleasure as well as for reproduction." Far be it from me to argue this, or any other, belief about ultimate matters. To make an act of faith seems to me a personal matter within a man's own discretion. All I wish to say here is that I would not myself call it an act of science.

To me it seems that all scientific method must rather begin with an act of renunciation. One has to prepare one's mind to see what is there rather than something one is looking for. Survey the scene historically, and I believe it will be found literally true to say that only those who have made this inner adjustment have ever seen something new. For the history of science has been one of astounding surprises. Hardly anything has ever turned out to be as expected. The facts of magnetism, or electricity, could no more have been foreseen than Columbus could have foreseen America. One is always starting off to look for one thing and finding another. Philosophers of the school of Aristotle used to say that nerves came from the heart. When anatomists first showed them coming from the brain there were professors who found themselves unable to believe what their eyes beheld on the dissecting table! One said, "I would believe had it not been that Aristotle said the opposite."

Galileo had to drop weights from the leaning tower of Pisa before he could convince himself, or any one else, that Aristotle was wrong in saying that

THE INNUMERABLE INSTINCTS OF MAN

heavy weights fall quicker than light ones, but that both fall equally fast.

At one time it was supposed that the germ of man was a very tiny man, complete in all its parts. The microscope showed differently.

Meteors do, in fact, fill space, and sometimes fall on the earth. But all the academicians of Paris once united in condemning as "superstitious" a crowd of country folk who had seen a meteor fall and who signed a document to that effect.

To take a more modern (and accordingly disputable) instance, Montessori, by observing children under such conditions¹ that her observations were reliable, and by following up a few simple clues, has been able to demonstrate that the real nature of the little child is to work, and not to play, as everyone has hitherto supposed, and as many still suppose. Of course, this work is not productive, but is work connected with the child's own development and growth. At the same time, it is not play—for it contains no fictitious or make-believe element of any kind.² Like eating, breathing or sleeping, it seems to require no "fantasy" to carry it along. It changes

¹ The method is rather like that of the chemist with his test-tube. One has to eliminate all possible interpretations except one. In the Montessori school there are no motives for the child's activity except interest. The teacher does not entice or compel. There are no prizes, punishments, class-lists, etc. There is no suggestion or coercion of any kind. Any work the child chooses and concentrates upon for a long time must therefore be chosen because he is interested in it. No other explanation is possible, and this gives us a precise and certain technique for exploring children's interests.

² I have expanded this in my book on thinking, "The 'Chemistry' of Thought."

A SCIENTIST'S PROFESSION OF SCIENTIFIC FAITH

with the child's age, and has characters which are absolutely universal for all children. To take two positive examples, the little child teaches himself to walk and to speak without apparently any ulterior motive than to do just this. He makes prodigious efforts to keep his balance without having to pretend to be his father, nor do we have to persuade him that he will need the power of speech to get into Parliament when he is grown up.

Much renunciation, of course, is needed to accept this in all fields. People may think it natural that a child should teach himself to walk or to speak, but find it hard to believe that he will train his senses or do sums in the same manner. But this is a modern battle, and I do not intend to fight it here. We are too much in love with the traditional child in his world of dreams—dreams which he acts out in imaginative play—to believe that a world of reality can take the place of this world of dreams, or that nothing is lost, but much gained, when it does so. We do not like to believe that this fantasy life of the little child was forced on him by us, who kept him away from the real life in which he would like to be up and doing. We still cannot believe that there is not some trickery about the provision of simple means of "real-life" activity (small furniture, etc.) to which the child takes as a duck to water, and that only through his own unfettered choice of these does his fantasy world go up in smoke. We know that starving men imagine banquets, and that imprisoned men fantasy all they will do when free, and no one suggests that starvation or imprisonment are good ways of

THE INNUMERABLE INSTINCTS OF MAN

stimulating imagination; yet there remains a lingering tendency to identify creative imagination with wish-fulfilment fantasy, though everyone knows that creative imagination needs hard work and much attention to real things.¹

Nevertheless, these facts of growth are forcing their way through the obstructionism that reigns in scientific circles no less than in others, and I shall have to refer to them fearlessly in what follows despite the animosity their very mention sometimes arouses. I mention them just here as examples of the unexpectedness which usually attends true scientific discovery.

If we consider that the hall-mark of science is its method, *and not what it discovers*, then, I think, we are saved from all necessity of prejudging issues. This is a very great boon. It frees the mind immeasurably for true observation. Should the delectable day arrive in which the human mind knows all, it may turn out that everything is material, or that nothing is material, or that some parts of the universe are one and some the other, or that the terms are purely arbitrary and interchangeable, or some other term may be in vogue by then, covering both. At the moment I prefer to range myself with the great Fabre in his immortal prayer (surely the Pater Noster of all scientists), "Teach us how not to know!"

As Fabre himself discovered, this attitude is particularly necessary in the field of instinct, since here we are dealing with facts which do not resolve them-

¹ See Montessori's great chapter on "Imagination"—"The Advanced Montessori Method" (Vol. I)

A SCIENTIST'S PROFESSION OF SCIENTIFIC FAITH

selves at all easily into concepts of matter and motion. In fact, they challenge—especially the more¹ recent ones—many popular concepts of science, including even Darwin's view that evolution took place by the natural selection of chance variations. But they do not challenge the view that one should observe carefully first, and think afterwards.

Therefore, the writer's open-mindedness on these ultimate issues, though annoying to some, cannot be regarded as inconsistent. They are permitted by his own notion of the scientific method.¹

¹ To-day's challenge to Darwin is not a challenge to the *fact* that evolution has occurred. This fact is undoubtedly admitted before Darwin's work. The points at issue between Darwinian and non-Darwinian biologists are entirely on the question of *how* evolution has occurred. No one disputes that it did occur.

CHAPTER II

Animals to the Rescue

A CURIOUS feature of to-day's attitude to instinct is that man is credited with a totally different kind of instinctive life from that of the animals. In all other respects the fashion (since Darwin) has been to prove that man and the animals are one. Satisfaction is felt when they are shown to differ not in manner but only in degree. The most common modern assertion about human and animal intelligence is that they differ in amount rather than in kind. Man's physical form and his various organs are treated similarly. Like-nesses are emphasised rather than differences.

Therefore it is all the more astonishing to find, when instinct is discussed, that man is credited with something vague and nebulous, while the animals are allowed to have instincts so precise that many regard them as reflexes.

Even the number of instincts attributed to man varies kaleidoscopically from two—or even one—according to some psychologists, to about a dozen according to others. Freud, to be on the safe side, began with two instincts, sex and nutrition. These he felt it safe to postulate, though certain of his disciples later reduced them to one only—sex. Later on Freud—pre-occupied with suicide among his patients—added a “death-wish.” “Aggression” has now appeared in certain derivative schemes as a twin-companion to love.

McDougall, on the other hand, writing just before Freud, gave man a whole battery of instincts, including not only sex and self-preservation, but self-

THE INNUMERABLE INSTINCTS OF MAN

assertion and its curious opposite, self-abasement; parental, flight, herd, and so forth. Educators universally assume a "creative" and a "fighting" instinct in children. But Adler, in a kind of revolt from Freud, has made everything in the human psyche revolve round a longing for power and possession. Montessori, on the other hand, has recently asserted that these last two tendencies are "deviations from normality" due to early frustration of the child's need to be active. Many adults, according to Adler, suffer from a sense of "organ inferiority," which can only be the obverse of the wish to be perfect, with all that this implies of a deep-seated intuition of what perfection is.

It is clear that in this happy hunting-ground every writer can take his choice. To-day, in fact, no particular selection or re-arrangement evokes criticism, or even comment. No one can call this a United Front (even when that happy phrase does connote a somewhat Divided Rear). Moreover, all these psychologists state that human instinct has a "diffused quality," making its action on human life much more tenuous and uncertain than the action of instinct in the lives of animals. They consider that instinct in man shows itself more in feeling than in action.

But when we turn to animal psychology, we find everything more clear, more orderly, and more easy to understand. True, there are several schools of thought, but these hardly differ as to what the animal instincts *are*. Their whole *raison d'être* turns on the discussion as to how instinct, in general, should be regarded. Is it, for example, just an extension of

ANIMALS TO THE RESCUE

reflex action, as held by Pavlov? Is it the hereditary trace of behaviour once intelligent? How can instinctive actions be recognised; for example, do they always conform to the "all or none" principle? This was the idea of Rivers.

But this very natural and proper querying as to what instinct is, occupies a different place in science from the direct, simple and factual question as to what the instincts are. It is here that all are agreed in the case of animals, while few agree in the case of man.

I am going to suggest that in human psychology we have been looking the wrong way. The main source of error has been a tendency to theorise and generalise first; to begin all discussion with a definition. Instead, one must start by a full and unprejudiced survey of all the facts which reliable observation has been able to accumulate either in the human or animal world. True, there has been a great multiplication lately of really scientific observations of instinctive behaviour. There is now a great field of fresh fact for meditative survey. Whereas it used to be necessary to concentrate on a few observations (such as Darwin's wasp, or Galton's herd of cattle), observations which one supplemented very largely by imagination (as McDougall did with his birds on the uninhabited island, whom he pictured as disturbed for the first time by gunshot), to-day one can wallow and soak one's mind in a galaxy of facts straightforwardly described by their observers without any attempt at interpretation or comment. From time to time some of these facts come up for revision,

THE INNUMERABLE INSTINCTS OF MAN

an observation is proved to have been wrong; but this does not detract from the general value of the material.

What is the next step? It would seem natural to make up one's mind what common elements, if any, all these so-called "instinctive" actions contain? Having established this, we should have some universal signs, or marks, of instinctive behaviour, and with this in mind we could perhaps turn round upon the behaviour of man to see if it contains any similar marks. This would be a new method of determining what the human instincts are (a problem quite apart, as we have said, from the more universal problem of what instinct itself is).

So far as I am aware, no one has yet tried this method. McDougall, in listing the human instincts, started with the human emotions, taking it for granted that every emotion is associated with some instinct, and would therefore be a reliable guide. From an *a priori* standpoint, every instinct *may* have its own emotion, but unless you know what the human instincts *are*, this remains a speculation which there is no means of verifying. For you cannot see an instinct. You can only infer it. To infer an instinct wherever you find an emotion may enable you to compile a list, but this does not prove that your initial speculation was correct. To prove it, you would have to know *by some other means* what the instincts were, and then compare them with the emotions.

Freud, who derived his hypothesis from clinical data, ignored no less than McDougall any direct help from animal psychology. Hence a vast field lies open

ANIMALS TO THE RESCUE

for the application of this new method which I suggest.

To which observations in the animal world shall we turn by preference? Some are hidden away in abstruse papers, others are published in cheap and readable books. I do not deny that some of the former may be of special accuracy and reliability, but the latter are more accessible; and here it is important that every student should turn as much as possible to the facts, and form a sort of "sense" of the issue for himself. Otherwise one's conclusions may be correct, so far as words and formulæ can make them, but they still lack the "body" and weight that comes from an extensive familiarity with many examples. Fabre, though criticised—as he has been—for detail, cannot be overlooked for profusion. Darwin himself called him "that great observer," and his is an outstanding figure in the world of naturalists. His major works—masquerading, unfortunately, behind "publisher's titles" (for example, "Social Life in the Insect World"), but which he himself entitled "The Life of the Grasshopper," "The Life of the Spider," "The Life of the Glow-worm," etc.—have now been published in cheap translation, and—written as they are in the glowing language of a great enthusiast—form not only one of the most extensive fields, but one of the most readable, for "forming one's mind" in this direction.

Another observer whose book deserves wider fame is Edgar Chance in "The Cuckoo's Secret." Though somewhat more technical in manner, it is full of practical wisdom, fresh discoveries, and provides a

THE INNUMERABLE INSTINCTS OF MAN

perfect example of the way in which special methods of scientific research have to be evolved to meet special needs. Many of McDougall's observations are now available in book form; and sidelights on instinct are sometimes thrown by a book such as Köhler's "Mentality of Apes" (which aims primarily at studying intelligence).

Now, before starting on our main theme, it is necessary to clarify the issue a little. Many a question cannot be answered because it is put in the wrong way. As a celebrated philosopher once put it, "The question itself is wrong." To use a very crude illustration, suppose a man says to you, "How many yards are there in a gallon of oil?" One can only look at him seriously and say, "Are you sure that is really what you want to know?"

In July, 1927, I published in the journal, *Psyche*, an article¹ in which I showed that the whole notion of instinct has really come into existence in a negative kind of way, *as a contrast to intelligence*. We see, for example, a hen sitting on her eggs, or we see birds migrate, and it does not seem possible to us that this supremely wise act can be due to intelligence, since the intelligence required would be far too great. Some other explanation is needed; so we invent, or assume, some interior form of guidance which we call instinct.

But the result of this procedure is a very mixed bag. *All useful actions which are obviously not intelligent* get dumped into it. Often it contains actions of a simple

¹ Reprinted in my "Intelligence and Mental Growth" (Chapter VIII).

ANIMALS TO THE RESCUE

muscular type, such as swimming. "We have to learn to swim, the fish doesn't; therefore," we say, "the fish swims instinctively." Another group is wholly sensorial; pheasants nest low before a dry summer, pigeons find their way home over immense distances. Action is here guided by some kind of special "sense" which we do not possess. We often call it an instinct, but only because it is something unknown to us.

Yet a third, and far greater, group exists, in which neither unusual movements, nor unusual senses, are in question. Here the creature simply does what is obviously the "right thing," but he does not seem to know why he does it. Many an insect makes careful provision for its young, only to die before they are born. We, the observers—the intelligent beings—can understand the usefulness of the act. But to the creature—the doer—it is hidden from view. He acts blindly, and yet, it would appear, correctly.

I showed in that article how much better it is to keep the word "instinctive" for the latter class alone. After all, we already have names for the other two. They are sensorial or muscular, respectively. We ourselves are born with certain co-ordinated movements, movements we do not have to learn, such as sucking, sneezing, vomiting, etc., and this shows that nature can easily produce unlearned movements (of high complexity) if she wishes. The mere fact, therefore, that we possess some such movements and animals others, is no reason for calling theirs instinctive. They all come under the single heading of *innate co-ordinated movements*.

THE INNUMERABLE INSTINCTS OF MAN

The same can be said for the senses. No one disputes that animal hearing, or animal smell, differs from ours in many ways. And even a "sense of direction" is still a sense, however puzzling to us its nature may be. Like every other sense, it furnishes its possessor with *guidance*, and by refusing the name "instinct" to this also, by calling all functions of this kind plainly, *senses*, we are left with a group of actions much more homogeneous, much more alike *in kind*. And among these the work of finding common features should be fairly easy "One name for one class of things" is the rule, but when a class contains a jumble of different things, then definition is bound to be difficult.

Let us, accordingly, proceed on this plan Under the heading of "instinctive actions" we shall consider only those actions of which the purpose is obvious enough to us, but apparently hidden from the doer.

But even here some revolutionary innovations await us; for directly one touches the huge body of fresh observations now available in this sphere, there emerges a very striking and inescapable fact. It is that the time-honoured names for the instincts, such as "reproductive instinct," or "parental instinct," have ceased to have any useful meaning. This is because the actions of the animal observed cannot possibly be prompted just by a state of nebulous and formless desire, such as those words convey.

The actions connected with reproduction (for example) are not just single actions, or even single types of action, but they are always sets of actions which take place in a fixed order. Not only are these actions

ANIMALS TO THE RESCUE

precise in themselves, but they vary enormously from one species to another. In fact, they are highly peculiar to the species concerned; so much so that one could even identify a species from its reproductive actions alone. What a different thing is such a series from the vague notion given by the words, "reproductive instinct"! To say merely that an animal has a "reproductive instinct" is to conjure up a misleading vision. One thinks of some more or less simple psychic entity, which it shares with other animals, and which can of itself cause it to reproduce in the given manner. But there is no shadow of evidence to show that creatures are, or can be, guided by so featureless an entity. Phrases like this are meaningless because they lack necessary content. They stand merely for a notion on our part—some kind of vague abstract inference—to which nothing in the world of reality can conceivably be attached. A few examples will make this clear.

In the Natural History Museum at South Kensington are models of the eel common to our streams and rivers. This creature starts its earthly life 2,000 miles away in a breeding-spot at immensely low levels in the West Atlantic. In a leaf-life larval form, a few inches long, it crosses the Atlantic, taking three years over the journey, growing up meanwhile and reaching our shores in a condition ready for metamorphosis. It changes to the elver, shorter and narrower than the "leaf," and more like the grown-up eel. Developing a fresh-water propensity (with appetite to boot), it swims up our rivers, living there and putting on weight for anything from five to twenty years (accord-

THE INNUMERABLE INSTINCTS OF MAN

ing to Schmidt, the discoverer of all this). It grows to a length of several feet, the female being larger, and roaming farther, than the male. But it does not mate; indeed, this enormous eel is still in the pre-pubescent stage of life. Can it be that secret enemies would menace its young if it tried to breed in our rivers? One does not know, but one day a restless fever descends upon it; nature prepares it for a journey. Losing appetite, it changes colour, putting on a silvery sheen, sharpening, darkening and strengthening its fins. Heedless and fasting, suddenly it tears madly down-stream, making for the ocean, where it swims for two thousand miles back to the place of its birth. Anywhere *en route*, one might imagine, could it fall in love with a neighbour of opposite sex; but no, there is to be no loitering or courting before arrival. Here alone, in the never-never land of its pre-eel life, does mating take place; and here, having given birth to an astronomical number of young, do both parents end their days, we do not know with what speed.

Now, the reproductive instinct is one thing, traipsing across ocean with no love-making is another. Yet the language of instinct contains no word for this journey. Biologists merely note that it occurs, while psychologists, in a totally abstract fashion, talk about the reproductive instinct of animals. But the eel's instinct, if instinct it is, starts by leading it a rare dance. I defy anyone to foresee, from the words "reproductive instinct" alone, that the eel will behave in this extraordinary fashion.

Terms are useless unless they mean something

ANIMALS TO THE RESCUE

What does this term mean? Is it an entity supposed to have real existence? Could it conceivably be dissected out? Or is it a function, located like other functions, in some particular organ, or in some part of the nervous system? No one has any idea.

It is just a term. Directly one asks what it means one sees that it means nothing. Observation, on the other hand, reveals various facts—facts which would, at first, be better expressed by saying that the eel has *no* reproductive instinct; that it has, when young, a journey-making instinct, followed by a feeding-instinct, and then another journey-making instinct; and only after that, when time, place and mood are all fitting, does it occur to it to make love.

If the single term, “reproductive instinct,” is to convey to us all this about the eel, then it is clear that we are wanting a lot for our money. Especially is this true if we want the same term to mean some quite different line of action followed by the cuckoo, or by any one of those insects described by Fabre, each of which has a reproductive cycle presenting a chain of actions, specific, surprising, and differing *in toto* from the chain followed by any of the others.

Let us quote Fabre in one of these remarkable histories I choose that of the *Sitarsis* grub, a fly parasitic on the *Anthophora* bee. This fly lays its eggs just outside the bee’s burrow, which is a kind of tunnel in the side of a sun-baked bank of earth. The *Anthophora* is a solitary bee, which does not live the communal life, and this tunnel admits her to the single cell she has constructed. She flies to and fro, filling this cell with honey, on which she will finally deposit her egg before sealing it up.

THE INNUMERABLE INSTINCTS OF MAN

Fabre observed that there often emerged from the bee's cell a young *Sitaris* fly instead of a young bee. He therefore assumed that the *Sitaris* grubs, after hatching, must make their way down the tunnel and enter the bee's cell. To his astonishment, he observed that nothing of the kind happened. The *Sitaris* eggs hatched at the mouth of the tunnel and the tiny worms lay about in helpless fashion, making no attempt to crawl anywhere. More surprising still, they betrayed no sign of hunger, even refusing the offer of honey which Fabre naturally supposed would be their diet.

By a feat of remarkable endurance he was able to discover what they were waiting for. It was something without which they could not proceed to their next action, even though it might be a meal. They were waiting to be taken for a ride on the bee's back! Snuggled into her fur, holding tight with special hooks and mandibles, and aided by a sticky gum which they exude, they travelled with her on the many long flights which she made before sealing her cell. For this purpose they were hatched at the mouth of her tunnel. Thence they leaped on her as she passed to and fro.

But why this delay? Why the free ride, when their objective was the cell? Observation solved the puzzle. Not till the last moment before she closed it did they dismount and enter.

At the very moment when she laid her egg, one of the grubs jumped from her back and alighted, not upon the honey, but upon the egg. This was to be a raft for him, for it floated on the honey, and

ANIMALS TO THE RESCUE

without it he would surely drown. For this grub is yet too small to sip the honey without becoming entangled. The bee then closed her cell, unconsciously leaving within it the enemy of her race.

Subsequent observation in the laboratory showed the next stages. The *Sitaris* grub wastes no time. Being equipped with a suitable instrument, he rips open the cell and begins to broach its contents. This is his first meal—not honey, but the nutritive yolk of an egg. On this diet he grows, still using the shell as a boat, till he is big enough to tackle the honey. Later, having profited by the bee's industry, he will emerge as a full-grown *Sitaris* fly.

Now, no one can maintain that this series of actions is intelligent. How can a fresh-born grub understand the physics of floating or plan the details of this super-crime? How can he even know that his future destiny is to become a fly; that the bee herself will take him to honey, launch thereon a boat for him, or even that honey will be good to eat?

Before problems of this kind we vote (as always) for "blind instinct." What we naturally feel is the necessity to postulate something—some kind of psychic gift—to replace the missing intelligence. For we see an action demanding explanation, and we know quite well that intelligence will not serve.

But what kind of "something" ought to be postulated? Is it something simple, or something highly complex? Is it one thing, or many things? We ought not, surely, to feel satisfied—as though we have explained everything—by saying of the *Sitaris* mother-fly that she has a "reproductive" or a "maternal"

THE INNUMERABLE INSTINCTS OF MAN

instinct when she lays her eggs outside the *Anthophora*'s tunnel. It surely will not do to say that the *Sitaris* grub has merely "an instinct for self-preservation."

These terms fail. They lack the needed content. They are much too crude and elementary. I remember being with a gentleman who stood looking for a long time at an unusual species of tree, and then said, in fun: "Plant Life." If that was a good joke, so is this. Let us at least do these facts the honour of recognising their detail, their parts, their specificity. If instinct is to be our explanation, ought we not to say that the new-born *Sitaris* grub has an instinct (1) to wait for a bee to pass; (2) to leap on her back; (3) to wait thereon till the egg is laid, (4) to dismount upon this; (5) to rip it open; (6) eat the contents; (7) that a new hunger now develops, the hunger for honey, and that this is followed by (8) emergence and leading the life of a fly; until (9) conjugation takes place and the female in her turn has the instinct to lay eggs at the mouth of an *Anthophora*'s tunnel?

The point is too important to let it go with a single example. Here is that of the *Capricorn* beetle, also due to Fabre. For three years the larva of this beetle ("a grub," says Fabre, "looking like a bit of intestine") burrows in the heart of a tree. It eats nothing but wood, and only when the time draws near for its metamorphosis does it come near the surface—always a dangerous place owing to wood-peckers.

But the risk must be taken, since it has to prepare for a new life, a life of flight in the open world, and it must go to sleep near enough to be able to break its

ANIMALS TO THE RESCUE

way out when it reawakens as an insect. It leaves, in fact, just a thin door of bark, which it will be able to push away with its head, and behind this it constructs a beautiful cavity lined with silk, where it ends by taking a very elementary but necessary precaution, that of going to sleep the right way round! Neglect of this would mean entombment at birth, since it could not turn after the change, nor force its way backwards, owing to its wings.

But how does this grub know that it will become an insect, or even have wings, never having seen the outside world? Here, again, we are amazed at a prescience, which by no means whatever can we assimilate to our notion of intelligence.

We therefore say the grub is guided by instinct. But again, there is not just one instinct. There are many. There is an instinct to approach the surface (formerly avoided) at a certain age. There is an instinct to enlarge its tunnel and to line the new chamber with silk. There is another to leave just the right thickness for the door; and still another to go to sleep with one's head towards that door.

There is no end to the number of such stories. All are different. The Tarantula spider—to quote one more from Fabre—spins a circular mat like a six-pence on which to lay her eggs. This she gathers up round them, making a small sack, or “pill,” which she drags about everywhere after her at the end of a cord attached to her body. This pill she defends with her life, but she will accept a clumsy cork substitute and defend it with equal vigour. She seems quite unintelligent as regards the contents of

THE INNUMERABLE INSTINCTS OF MAN

her pill. All her affection is lavished on the pill itself. For long hours she holds it to the sun, rotating it from time to time with her back legs. But when the tiny spiders are born and congregate on her back she accepts those of another brood as readily as her own. What we have always to explain, therefore, is not a single unintelligent action, but a number. It certainly seems a bit trusting to ask a single psychic entity to account for all of them.

Nor do we see this kind of thing only among insects. Creatures much more easily observed, everyday creatures near at hand, show it too. Why does the broody hen sit? We know that the eggs won't hatch unless kept warm, but does she? There is no proof that a hen new to the business even foresees the chicks. When the eggs are hatched, her "sitting" instinct gives way to another one, that of looking after her chicks. But does she understand the ultimate purpose of her care? The chicken is a very stupid creature, judged by her failure to learn even to avoid upsetting her drinking-bowl (which she does time after time, then clucking for thirst). Other birds show an even longer series. There is migration, nest-building, laying, sitting, feeding the young, and later turning them out of the nest, before migration starts the cycle again. Does the bird keep foreseeing the next step, or is there an instinct to perform each action in turn?

Why does the cat lick her fur? Is she instinctive in this, or intelligent? We know there are good reasons for it. This is an hygienic measure. Her fur would become unhealthy; she would get ill if she didn't.

ANIMALS TO THE RESCUE

But does the cat know this? Perhaps some remote forbear of hers attended lectures on hygiene? Perhaps the kittens of this cat passed on the ancestral memory, which has now become unconscious? But even this theory presents difficulties, since we ourselves have only recently understood the matter. Pasteur's discovery of the microbes put us on the track. Before that we were even less fortunate than the cat, since we had no instinct to guide us, and merely neglected to wash.

But, joking apart, what are the instincts of *Felis Domestica*? Many would say they were nutritive, reproductive, self-preserved, maternal, hunting, flight, gregarious, and so forth. But the cat always digs a hole for her excrement, and then covers it up. Which is this? Is it hunting, maternal, gregarious? Certainly, she is not very intelligent about it. Have you ever watched a cat provided with a small earth-tray within doors? Her efforts can be very amusing. She digs a hole successfully, but to cover her excrement, she has to paw the earth from round about. The tray being limited in size, she may elect to paw some part of the surroundings where no earth is; for example, the polished floor just outside the tray. But she never seems to connect her lack of success with this circumstance. She paws and paws, occasionally looking round as though in astonishment, and may even transfer her efforts to the vertical wall. Nature, in other words, has given her the correct movement, at the right time and place, she even has the right direction, since the scratching movement is always *towards the hole*; but nature has not provided

THE INNUMERABLE INSTINCTS OF MAN

her with that modicum of insight into causes and their effects which would enable her to link up the actual *movement of earth* with the covering of her excrement.

This observation is so universal that it need not be attached, with names, times and places, to any particular beast. The action fits into none of the usual classifications of instinct. But must we try to make it? Why not give them all up and say simply that the cat, feeling the need to excrete, has first a hole-digging instinct, then one to deposit her excreta in the hole dug, then an instinct to make scratching movements towards the hole and then one to desist when the excreta has vanished? On no other basis can it be useful to make instinct an explanation.

CHAPTER III

Why Not Reflex?

Of one thing can we be certain. Instinctive actions exist. These actions are facts. But the instinct which may, or may not, be behind them is an inference; for only the acts can be observed.

It is true that we often observe other types of action without calling them instinctive. Some we call intelligent actions, others reflex actions. What is the difference? If there is any difference, how do we know it is there? In the absolute sense, we have no direct means of knowing. We can only guess. All depends on what we *assume to be* the operative factor behind the actions seen. What we do in practice is to assume instinct when both intelligence and reflex-movement are ruled out. What rules out reflex-movement? This is an important point very necessary to understand

Reflex movements are wholly mechanical. They consist of particular muscular contractions operating in response to particular stimuli. The same stimulus always produces the same response under the same conditions. Variations are due only to fatigue or to the intervention of some other urge simultaneously at work.

But instinctive actions differ from these in the fact that only their goal is fixed. The muscular contractions needed to reach this goal can vary, and do vary, in amazing degree. The scratching movements of a dog are fairly fixed. They are truly reflex. But in hiding a bone, or barking at a burglar, the dog makes all kinds of movements.

THE INNUMERABLE INSTINCTS OF MAN

Not only is the goal alone fixed, but it often has ups and downs of its own—a kind of periodicity. Your hen is not always stirred to action by the sight of a china egg. But scratching is always set off by irritation of the skin.

Again, there may be no outer stimulus at all required to start a chain of highly instinctive acts. Fabre describes a hunting wasp, who seeks out a suitable place for building a clay cell, or hut, in which she will deposit her egg. She seeks a warm, dry, protected spot. Sometimes she finds it at the back of a cottager's fire-place, to which she has actually to fly through the smoke of the fire. The stimulus to this action was certainly not the sight of the spot—for she could not see it. If you like, you may assume some inner chemical change to initiate "the mood to search," but this only pushes the question one stage further back, since you next have to ask what started the chemical change? The very essence of a reflex is that something must "happen" to set it off. It is a responsive mechanism waiting to be called upon; like the fire-engine, or the ambulance. No occurrence is reflex which happens anyway with the fatality of growth itself.

One further point is that a reflex has a clear muscular-neural organisation, which can often be dissected out. But no one has ever yet found the "organ" for an instinct.

To go back to our first point, even when instinctive actions *are* on occasion started by outer stimuli, they still differ from reflex movements in respect of their variability. A bird, we may say, instinctively feeds

WHY NOT REFLEX?

her young, and is driven to do so at the sight of their open beaks, but no one suggests that her muscles thereupon undergo fixed spasmoidic contractions. She scours the neighbourhood for food, flying now here and now there; she takes different routes to-day from those she followed yesterday. She finds a worm and pecks at it from this side or from that, or she has a tug-of-war with it if deeply embedded. In the absence of a worm she takes a crumb, making a different series of movements.

Sherrington has remarked that here there is a chain of *indeterminate* movements, but that, at the end of every such chain, there is always *one fixed movement*, to which all are leading up. This he calls the "consummatory reaction." It is the end desired, the creature's "goal." And once this *fixed action*, or aim, is accomplished the creature ceases to be interested in such consequences as may follow.¹ It is true that in the case of the bird, the feeding of those gaping beaks is but the prelude to important changes of digestion and metabolism within the tiny birds themselves. But is the mother-bird interested in this? One might say, "It is the ultimate objective of all her work." But is she aiming at that? No. She knows nothing of it. This was nature's purpose. But it is not her purpose. Her goal is the feeding. She is satisfied when that is done. Nature has so made her that she looks no further.

But this is the same notion as the one we started from. Here is a creature who "does the right thing

¹ "Integrative Action of the Central Nervous System," by Sir Charles Sherrington

THE INNUMERABLE INSTINCTS OF MAN

without knowing why." It is surely an interesting and remarkable fact that this phrase of Sherrington, the "consummatory reaction," should so perfectly epitomise the whole question at issue. It has an effect upon our view like the bringing of a lantern-slide into sudden focus. The *indeterminate* movements which precede the consummatory reaction obviously blow sky-high all efforts to identify instincts with reflexes. The consummatory reaction is the fixed end of a free chain of actions; it is only this "last link" that the creature *has* to carry out. This only is that portion of its behaviour irremovable from the species. It is at once the immediate goal of its apparent striving, and—curiously enough—the point beyond which it does not appear to be looking. This is the "obviously purposive" action, of the purpose of which the doer is seemingly ignorant.

Moreover, these are the words of a pure physiologist. Even more than Pavlov does Sherrington stand for the "objective method of research." Not an observation does he describe except by a graph, not a movement does he record except on a drum. Sherrington's monumental work was all done upon dogs or apes in which the higher nervous centres had been cut off from the lower; for example, the brain had been severed from the spinal cord, leaving to the passive limbs nothing but a power of "response to stimulus."

Yet how striking is the comparison between his position and that of Pavlov, for although Pavlov worked on *unmutilated* dogs, it was he who followed William James and Herbert Spencer in declaring that instincts are really reflexes!

WHY NOT REFLEX?

Unfortunately for its future, Pavlov's work is based on an extremely insecure foundation—if, indeed, it can be said to have any foundation. For a close study of his great book, "Conditioned Reflexes," will show that he committed a logical fallacy before beginning to experiment at all. In the introduction itself he states, perfectly correctly, that reflex mechanisms produce unvarying responses. But he then goes on tacitly to assume a conclusion which is not valid, namely that the opposite is also true, and that whenever you find an "unvarying response" you *must* be contacting something reflex.

As I pointed out, somewhat more fully, in my "Chemistry of Thought," this is like arguing as follows: "An observable system of railway lines carries trains from London to Edinburgh; therefore, whenever we see vehicles leave London and arrive in Edinburgh they must have travelled on railway lines." Obviously this is a *non-sequitur*. It *might* be true of the nervous system, but you cannot prove a thing in science by assuming it to start with.

And as the whole of Pavlov's experimental work was based on this assumption—for he did nothing but study "unvarying responses," assuming them to be reflex—it follows that the whole edifice of his famous "conditioned reflex" (or newly-created reflex) falls for lack of foundation. (With it, of course, goes the Behaviourist school of Watson, from the bottom up.)

Whether or not unvarying responses are all reflex is, of course, the great point at issue for a mechanistic interpretation of mind. For undoubtedly "great

THE INNUMERABLE INSTINCTS OF MAN

minds think alike.” Give the same chess problem to ten first-class players, and all will solve it in the same way. The more intelligent the mind that faces any problem, the more certain it is to find the best solution. There is only one right answer to a sum. But does this uniformity *prove* that thought is mechanical? One may *assume* this; one can work with it *as a theory*, but one must not assume that the theory has been proved.

Because the instinctive creature preoccupies himself with a “means to an end,” and not with the end itself, we always think of him as “a bit of a fool.” Yet we know that his preoccupation is a wise one, and for that reason we credit him with some form of guidance: with an instinct. The Tarantula spider in love with her pill is a good illustration; or the hen who sits because she wants to sit, and not because she foresees the hatching, or knows that warmth is needed to bring this about. Copulation itself is a perfect example of Sherrington’s “consummatory reaction”—something desired “for its own sake,” led up to by courting, but of which the consequences may be quite unforeseen, or totally uninteresting—until their advent.

In a similar way, the child who first “teaches himself to stand and then to walk” does each in turn because he “wants to,” and not (we imagine) because he foresees that standing and walking will be necessary for earning his living later on. For a similar reason he may be seen watching intently the lips of anyone speaking, an important prelude to speaking himself.

And now do you see where all this is leading? How

WHY NOT REFLEX?

many modern psychologists have on their list a "stand-learning" instinct or a "watching-the-lips-of-speakers" instinct? Yet children in the most modern maternity homes are often observed (and allowed!) *to fall asleep standing up*, while making their first "over-enthusiastic" efforts to acquire this art!

CHAPTER IV

The Innumerable Instincts of Man

INDEED, directly we turn to man's life, with these notions in mind, we find it by no means poor in instinct, nor is it filled with a vague nebulous kind of instinct differing from that of the animals. On the contrary, it is filled with instincts every bit as detailed and precise as those we have just seen.

How are we to recognise the instinctive actions of man? By applying those criteria which are common to all the instinctive actions observed so far.

- (1) They have a variable and a fixed part. The variable part leads up to the fixed, or unchangeable, part, which has a universality at least as great as any of the other biological characters of the species.
- (2) This fixed, or last, action of the variable chain (for example, swallowing) is itself a means to further ends (for example, digestion, metabolism, etc.) not necessarily known to the doer.
- (3) It is desired independently of such ends. It is desired "for its own sake," as though it were an end in itself.

Directly we apply these criteria to man we find a mass of instinctive actions so plentiful as to come with a shock. If anything, man is more instinctive than the insects. We only need to be shaken mentally free from the shackles of ancient verbiage to see this.

Man's instincts are so many that one hardly knows where to begin. Let us take them in groups. There is a nutritive group, a developmental group, and a

THE INNUMERABLE INSTINCTS OF MAN

reproductive group, for a start. But they must all be studied in detail. You cannot possibly predict them. It is all nonsense to talk of a "nutritive instinct," a "developmental instinct," or a "reproductive instinct." These are terms too general to mean anything. Let us start with nutrition.

Does the babe-in-arms long for beefsteak? No; only for milk. Why? Doctors can give a very good reason, but can the babe? Do we never feel a loathing for sweets, having eaten too many already? Can we gauge more or less correctly what helping of potato to put on our plate? Does reason dictate these estimates? Are they not purposive? Should we not act as we do whether we could give reasons or not? Very well, then, they are not intelligent.

Are they reflex? Most reflex actions have a purpose, and in this way they resemble instinctive actions. But we have already pointed out the difference. Hunger is no doubt set up by a chemical secretion, but we do not immediately follow it by champing movements or by biting the nearest thing. Between the state of desire and the consummatory reaction of swallowing there intervene any number of *indeterminate* actions, which vary according to our whereabouts, our financial means, the time of day, or even our own ingenuity; for intelligence (in the case of an intelligent being) is often called in to find the way to the goal.¹

If this be true—in other words, if it be justifiable to speak of a nutritive act as an instinctive act—then it must be no less justifiable to regard as instinctive any

¹ This point is essential for a full analysis, and will be dealt with later.

THE INNUMERABLE INSTINCTS OF MAN

specialised desire for a particular type of food: a beefsteak, a milk-and-soda, or an ice-cream.

But here a strong objection can be made. It may be said that none of those particular foodstuffs is given in the natural state of man. How, then, can the desire for them be instinctive?

But why should the operation of an instinct rule out all experience? A person may know the taste of chocolate *éclairs*, and also that of rump steak. He may be fond of both. Nevertheless, there are occasions when the very thought of an *éclair* makes him feel sick, and still others when he could happily eat an *éclair* but could not bear the sight of a steak. It is this interior and unreasoned choice which indicates the instinctive factor.

Instinct plainly leads one to choose the nearest thing which *approximates* to the need concerned. We ourselves may know nothing of the chemical differences between proteins, fats or carbohydrates, but if the body needs protein we shall find ourselves dreaming of steaks—if we know of them; and if they aren't available, but a choice exists between scrambled eggs and treacle tarts, we shall choose the scrambled eggs.

On the other hand, the use of drugs is obviously not instinctive, but experiential. Here we are definitely seeking a given effect. We believe the drug to be a means of attaining it. Sweets we take instinctively, but quinine we take rationally. Sugar-toleration has a certain limit. After that we reject sugar. But the absorption of the drug called alcohol has no limit—or rather, it is limited only by foresight, by the end at which we are aiming.

THE INNUMERABLE INSTINCTS OF MAN

Whenever we fix our desire upon some definite thing (whether by reason or instinct) 'there is born what the psychologist calls a motive. This is a wish to obtain some definite end, as opposed to a vague generic urge towards we hardly know what. For example, I would like to go to a theatre, but at first no play on the list attracts me. Finally I choose one, and the motive then born is what prompts me to buy the ticket. The same thing happens when I look down the menu in a restaurant. One might say that every instinct must convert itself into a motive before it can act. *Fabre's Hunting Wasp* must select some definite site for her cell before she builds it. The young man must choose some particular girl to mate with. One cannot just marry in the abstract. This explains why instinct can remain eternally the same, while motives vary according to time, place and circumstance.¹

It seems to follow that anything implying a choice which is purposive, and yet unreasoning, must be instinctive. Instinct does the right thing without knowing why. This is the central point of our formula. It is true that after a great deal of scientific progress, we, the super-intelligent beings of the earth, may begin obscurely to see why. But the mere fact of "seeing why" you want something does not make you cease to want it. You want it anyway. Reason does not *replace* the choice of instinct. It may reinforce it, it may justify it, it may tell you to trust it.

Reason, nowadays, has taught the doctor to respect

¹ Current usage of the word "motive" is somewhat more confused than this. To me it is not uninteresting that this view should have brought greater clarity to this point also

THE INNUMERABLE INSTINCTS OF MAN

the "fancies" of a pregnant mother for odd kinds of food. But the fancies are still there; they still try to operate, whether reason supports, or opposes, them. These fancies bear all the marks of instinct; especially in their precision, their refinement, and perfect adaptation to their goal—a goal which can only be the nutritive needs of the embryo. Nor does the mother have any notion of what that goal is—for it is impossible for ordinary mothers to know enough about the chemistry of digestion and metabolism to foresee these needs. For that matter, medical science is not advanced enough either.

If selectivity in the sphere of hunger can be regarded as instinctive, then it must be still more so in spheres which are less material. The wasp shows it when choosing the site for her cell. Animals show it when they mate. Selectivity is a very universal character of life. Individual cells have it. Not only do they react differently to different stimuli, but they react differently to the same stimuli at different times. Tissue-cells of the body do not always take the same substances from the blood-stream. They "select" according to need. So do the roots of a plant in taking chemicals from the soil. Is it not possible that the very foundation and *substratum* of instinct may be found here? If the cell be selective, then higher organisms must be. "Desire" need cause us no surprise.

Indeed, one of the paradoxes of instinct is removed by this very hypothesis, namely, that the instincts have no ostensible "organ." There is no obvious structure, no part even of the nervous system, to which they

THE INNUMERABLE INSTINCTS OF MAN

can be referred. The lowliest insect, the tiniest organism, a grub which looks like a "bit of intestine," as Fabre says, can have the most complicated instinctive life. Where is the bird's desire to nest, its knowledge of when to migrate? Where is the dog's "loyalty," his love of hunting? What organ accounts for the insect's rigidity when danger threatens?

Intelligence, on the other hand, is *always* associated with high elaboration of the nervous system—with a brain which is larger in the more intelligent species.

This consideration is alone enough to distinguish instinct from intelligence. As we have already said, it distinguishes it also from reflex action, for this also operates by neural mechanisms fairly easy to locate. Is it not possible that nature starts with instinct; that both reflex action and intelligence stand higher in the biological scale?

CHAPTER V

Developmental Instincts

LET us now examine human activities in other fields, to see if the same marks do not come to light. Directly we begin, a profusion appears of detailed instinctive acts which was quite unexpected from the older point of view.

I will take a class of actions lately studied in the growth of children. The methods of education initiated by Dr. Montessori make an ideal instrument for this kind of research. They have revealed a set of instincts formerly unrecognised. These are clearly instincts connected with development. They resemble the instincts of nutrition, but while the latter have to do with finding the right materials for building up the body, these "developmental instincts" have the work of selecting suitable experiences for building up the mind, or rather for building up the whole active personality.

It would be untrue to say that the child has only one developmental instinct, an "instinct for growing up." He has an immense number. He has several which teach him to walk, and others to speak. We see him choose different objects for his activity at different periods of life. Before five he is mainly interested in things near at hand, especially those which lend themselves to purposive *movement*. After seven he shows mainly intellectual interests; then—at puberty—he becomes mainly social; and so on. The details have been very fully explored, especially in the years below eleven.

If you wish to see a person so enthusiastic about

THE INNUMERABLE INSTINCTS OF MAN

“housework”—brushing, sweeping, scrubbing, polishing—that he continues the same operation long after it is finished, you have to watch a child under five. He very obviously enjoys the doing more than the achieving. He is like Stevenson’s traveller, for whom the going mattered more than the arriving. The simple measure of providing him with serious implements small enough for his use, reveals a purposive, or serious, child—a child more like an immature man than the romantic plaything we commonly think him to be.

It is true that this serious personality commonly gets obscured by adult incomprehension, and recognition of it was therefore delayed till a scientific observer came to put its reality upon an indisputable footing. Adults usually “help” the little child, doing everything for him, or they defend their own property from his unskilled efforts. The child lives in what, for him, is an enormous house, where everything he would like most deeply to do infringes someone else’s rights. He may not sweep, he may not pour water, he may not clean the windows. This has the effect of shutting him off from real life. His serious impulses are therefore obscured and fail to be seen. In their place appear symptoms of frustration—often a caprice which is really rebellion: little refusals, such as to eat or to micturate, which are forms of revenge; while the sense of guilt which the child feels for so hating the grown-up (whom he loves and wishes to love at the same time) may distort and hide these motives from his own comprehension.

Unfortunately, these feelings of hate have become

DEVELOPMENTAL INSTINCTS

studied by psychologists under the heading of aggression, and this gives rise to the belief in some general aggressive tendency. Indeed, they seem to justify MacDougall's belief in a general tendency to self-assertion, with its obverse of self-abasement (due to the feeling of guilt). But not only do tendencies of this kind fail to conform to the marks of instinct that we are using, but they are much more likely to be products of a true instinct frustrated than they are to be instincts in themselves. If "purpose" be a constant mark of instinct, who or what, we have to ask, could possibly benefit from a general urge to be aggressive; especially if this be counterpoised by another urge to abase oneself, presumably always at odds with the first? Luckily there is no need to believe we are really made like this.

For behind both these manifestations—of aggression and guilt—we may trace something deeper which has all the marks of a true instinct. Should the child have a *tendency* "to build up in himself powers of co-ordinated movement," this tendency would agree perfectly with all that we have noted as essential to instinct. For the child, passionately teaching himself to make a new movement, is undoubtedly doing something useful—something which serves a purpose in the far distant future of his life. It is true that he may not foresee that future. But that is precisely what marks an action as instinctive. If, as all agree, human movements do not form themselves but have to be practised, why not an instinctive urge to practise them?

You may say that the movements which the child

THE INNUMERABLE INSTINCTS OF MAN

learns are not the same in one civilisation as they are in another; and this is very true. They differ also from one historical period to another. The Grecian boy threw the discus; the modern boy wields a bat. But instinct, as we have said, must always fasten itself to something definite. One cannot practise and perfect movement in general; one can only perfect particular movements. The instinct of the child may well be to acquire the movements which he sees about him, just as in learning to speak he does not try to learn all languages at once, but concentrates on his mother tongue. What we all do is to furnish ourselves with the movements we shall need for daily life in that civilisation wherein we find ourselves. It is rather like building a house. In Japan one makes a house of paper, in England of brick, in Switzerland of wood. One must have a house, but one chooses a form to suit the local conditions and the climate.

Curiously enough, we find it much easier to accept the truly instinctive nature of such impulses when they are associated with some outstanding gift. It does not strike us as surprising that a naturally musical child should spend hours at the piano, nor do we think it strange when a celebrated artist tells his interviewer, "I was born with a pencil in my fingers." We know that all games of muscular skill—tennis, golf, cricket, football, billiards and the rest—need unlimited perseverance. The most delicate co-ordinations of movement have to be established, and can only be established, by constant repetition. This means hard work; yet when children, obviously gifted, do this work spontaneously we feel no surprise.

DEVELOPMENTAL INSTINCTS

But we ought surely to expect equal enthusiasm for the practise of those movements which all have to acquire—not just those reserved for the gifted? Ought we not to expect in every child a craze for buttoning, for lacing, for scrubbing, sweeping, washing-up, laying the table, brushing one's hair, or polishing?

Expected or not, this enthusiasm is certainly there. We see it in the age (normally between three and five) when movements of this level are new to the doer, and correspondingly difficult. But later, at seven or so, when the intellect is awakening, they become less attractive. They then have a rival. The child is now interested in distant lands, in other times, in notions of arithmetic, in nature; he has entered the world of thought, and dwells therein preferably to the room he is in. He now finds it boring to be brought down to concrete detail—to be made to tie a bow, which at five would have been entrancing. So the life of this passion is transient. It belongs to a particular period of growth, and to that only. Later, the sweeping of a floor becomes a boring duty, as it is for us. But the skill given by early practice makes this duty a light one. So the purpose served by that early practice is very plain. How many nervous breakdowns are caused, in great part, by arrested development; by the necessity to do little things for which the adult feels inept? Washing clothes, keeping accounts, sewing, take longer than they ought. Here is a woman of thirty-five still a child in these things. She gets irritated, over-tired, retreats from life, breaks down.

THE INNUMERABLE INSTINCTS OF MAN

But can a child of three perceive his future so clearly that he makes deliberate efforts to prepare for it? When filled with a craze to wash-up, can he be taking conscious precautions against the day when life will contain too much washing-up? Even if he were, it needs more than a piece of reasoning to bring about efforts so intense. No mere wish for fame ever made a painter or a celebrated pianist. Unless love be there, foresight will accomplish nothing. What is this love which enables one pupil to practise for hours when another fails from sheer boredom? What is the love which makes a child re-scrub a table long after it is clean? This is not pure reasoning. It is not ambition. In the case of the adolescent child-artist, ambition does sometimes reinforce it. But it can do without ambition.

There is a highly significant, but little told, story of Galileo. When he was a boy his parents intended him for the Church. His schooling till the age of thirteen had been limited to the classics. But one day he passed the open door of a class-room where geometry was being demonstrated, and from that moment he was unable to give his parents or his tutors any peace. He simply had to study geometry. Like Columbus, he won his battle against overwhelming odds. Finally, this boy—having been given his head at this early age—became the founder of modern physics. But how could he, in any fashion, have foreseen that brilliant future? And if he did not, where lies the explanation of his eagerness? Was it (as some would say) a neurotic condition? Did an obscure “motive for revenge” prompt the craving:

DEVELOPMENTAL INSTINCTS

for example, was he just "reacting negatively" to the wishes of his parents? Or was he, perhaps, satisfying an unconscious fantasy of sexual origin?

These are by no means parodies of explanations put forward quite seriously by modern psychologists. One of the best known has even asserted that children's eager repetition of the same action, for example, dusting, is obsessive. But while it is true that almost every normal action can be simulated by an abnormal one, it seems unnecessarily far-fetched to explain every non-sexual enthusiasm in terms of abnormality. Simpler is it—and quite satisfying intellectually—to assume that developmental instincts truly exist, and that these are correlated with the future capacities of the adult, capacities which lie hidden in the child in the same sense that the oak lies hidden in the acorn.

Indeed, our modern knowledge of how growth occurs throughout nature is helpful at this point. Philosophers used to assume that living beings grew only in size, but they do not. To-day no one disputes that growth begins with a single microscopic germ-cell, which looks nothing like the adult being. This divides into two; those again into four, and so on; while gradually the new cells specialise, some taking on one job, some another; so that bone, muscle, and nerve in the completed being are all lineal descendants of the one and only first-cell.

When growth is complete all this sub-dividing stops. The creature is now adult. It has reached a certain limit to its growth, and there growth ceases. Thereafter it may get fatter, but its structure remains constant, fat being merely a deposit lodged among the tissues.

THE INNUMERABLE INSTINCTS OF MAN

All growth is therefore growth towards a fixed end. It is not unlimited. No amount of feeding can add to it, though starvation, poisoning or disease can impede or stunt it. Much mystery surrounds this hidden end, towards which development is proceeding. It seems to be a fixed limit—a kind of perfection—which is achieved, or not achieved, by the adult being. But in the tiny child, in the puppy, the kitten, the acorn, does this ultimate form—or goal—pre-exist, somewhat as the plans of an architect pre-exist the building of a cathedral? And if it pre-exists, *where* does it pre-exist?

Are the shadowy outlines of it present in the original germ-cell? Could a mystic see a vague shape always surrounding this cell? The fact that one such cell turns into a dog, and another very like it into a cat, or a man; the fact that most men differ, while twins (of the type which come from a single dividing cell) are alike—these facts make us think that it must pre-exist somewhere. The whole future individual, including his tendency to longevity or to fertility, his hair-colour, his eye-colour, his height, his beauty or innate malformation—all this seems to be already established from the moment of fecundation of the single germ-cell.

But if these bodily features are fixed, why not also his mental characteristics, his love of music or of art, his manual skill, or his intellectual ability? Sir Francis Galton showed beyond any manner of doubt that these characters are *inherited*; and the subsequent statistical work of Karl Pearson and his school has amply confirmed this.

DEVELOPMENTAL INSTINCTS

But while the body of a man can reach its final form if he merely keeps healthy, many of his mental powers, and all his skills, need practice. If the body-cells know how to divide and sub-divide till they reach a certain fulness, if the stomach knows what to call for in the way of food, why should it not be given to the individual to know instinctively what manner of things he must practise in order that his psychic gifts may mature?

You may say that perfection in these fields is unlimited, since it depends only on the quantity of practice he does. It may appear that the more the practice the more the skill. But experience belies that. Just as it does not follow that the more food an individual eats the more he will grow, so is it known to all teachers that their pupils have limits. A pianist can reach a certain level, but no further, practise as she will. Others surpass her with ease. It is so even with mathematics. There are many men who can never become Senior Wranglers. They may go high, but not so high as that. These things are commonly called "gifts." In common parlance, you "develop your gifts." And this common sense, or wisdom, of humanity is confirmed by research.

It is true that, having developed a gift one may use it or neglect to do so. A brilliant pianist may retire, or keep on giving concerts—just as a man with legs can lead a quiet life or walk round the world. But whether he has legs or has them not depends on two things: on whether his original germ-cell had the mission to develop legs, and on whether it received the nutrition needed for that purpose. So it is with practice. Practice is the nutrition of the higher gifts.

THE INNUMERABLE INSTINCTS OF MAN

Directly we become satisfied that psychic "gifts" are inherited no less than physical ones, it follows by an absolute implication that psychic *guidance* must be present for the maturation of these gifts.

Facts perfectly corroborate this reasoning. The appropriate work is done, but it is not done intelligently. Tiny children make the needed efforts without thinking or caring where they will lead. We ourselves divine the distant purposes of these efforts, but there is no evidence to show that the baby has in mind any objective beyond the enthusiasm of the moment. If we knew for certain that he were saying to himself, "Now, unless I get on with this walking business I shall never be able to earn my living when I am grown up," then, of course, we should regard his action as intelligent. But, as it is, we have no alternative but to call in the aid of instinct, since the intelligence hypothesis breaks down. A little girl who was criticised for too much talking, once replied, "Hetty must talk, Hetty must talk," as though this profound sense of her need settled the argument.

To sum it all up. If certain chemicals have to be taken from the earth to make the branches of an oak, and if certain forms of practice are needed to develop the mental powers of man, is it not reasonable to suppose that nature has seen to it, in both cases, that the growing being shall make his "selection" accordingly?

But even when convinced about all this, one may nevertheless be legitimately astonished to find in the young child a "mathematical impulse" every bit as sharply defined as the one to walk, speak, or cultivate

DEVELOPMENTAL INSTINCTS

that host of simple everyday movements which form the repertoire of human beings living in any given culture. It is often supposed that to interest children in mathematics one must cloak the subject in some other interest which they are supposed to have already; for example, shopping. But this turns out to be an error.

As explained before, children in the Montessori regime are not subjected to any adult pressure which would cause them to choose one kind of work rather than another. The occasional sight of a child doing no work at all is a proof that the teacher is not forcing them. I do not say this sight is common, because there is always something a little wrong with the child who stops working under good conditions for work, just as there is something wrong with the child who stops eating, or sleeping, when suitable food and comfortable beds are at hand. Perhaps some mental problem has arisen, or he cannot find his right work; but one does see it happen sufficiently often, even in a good class, to be a proof that no adult persuasion is being used. Any interests the children show under such a regime must therefore be genuine interests; in other words, *conditions have been established in which the observational study of children's interests has been rendered completely reliable.* Under these conditions, then, the following facts come to light. You may believe them or not. If you don't you will merely be like those superior individuals of Galileo's day who refused to believe in the rings of Saturn, despite the fact that anyone could see them through his newly invented telescope.

THE INNUMERABLE INSTINCTS OF MAN

From the age of four and a half (sometimes younger) children interest themselves in the pure science of number. True, those children here referred to are assisted by certain teaching devices, which Montessori took over from her forerunner Sèguin. But these models have nothing whatever to do with shops. All they do is to protect the child from wordy explanations by the teacher—the prime cause of every child's failure to understand. They also have the virtue of corresponding very closely to the children's mental processes, which are different from those of adults.

All children provided with these objects learn to count, and like to count. They like to add. But the things they first count and like to add are not models of beef-steaks, or of eggs; they are not even beans or matches. They bear no relation to any of the things of ordinary life; they merely represent numbers in a concrete form, they represent the notion of quantity in a shape as abstract as a model can express it. Thus the interest the children show in these things resembles the interest of the higher mathematician, who is interested in the laws of quantity pure and simple and who likes to express these laws in terms quite apart from daily life. For that very reason, of course, these laws are applicable to daily life in all its branches. And the children also like to make applications, once they have understood the fundamental principles. But the principles themselves are what attract. There is no need to hide this powder in some jam.

Why this interest, and whence does it come? It may seem astonishing to say so, but it appears to be quite universal. It is not less common among children

DEVELOPMENTAL INSTINCTS

than their enthusiasm to walk or to speak. In fact, there are more retarded talkers than retarded arithmeticians! Thanks to the clarification of Sèguin's models, even that invention of distracted pedants, the "non-mathematical child," has vanished like a wraith; while schools for backward children report a 98 per cent "educational efficiency" as revealed by tests. A phenomenon like this cannot be due to sporadic good teaching, or to "suggestion"; nor do the children have to tell themselves (or need persuasion) that arithmetic will be useful to them in later life. Only one conclusion presents itself, that man is a mathematical animal—a conclusion, in fact, borne out by history, for mathematics is the oldest of the sciences.

No less an authority than Sir Percy Nunn¹ has confirmed this view, narrating (as chairman to a meeting where I expressed these views) how he and his little brother used to count themselves to sleep. One night they reached 2,000, counting 'one at a time'! This counting fever is not unusual, and Montessori children either write the numbers one by one, or count long chains of beads—which are provided, albeit, for another purpose, to represent the squares and cubes of numbers.

Here is no place for detail, since I am not describing an educational method, but only drawing those psychological conclusions which follow from its success. These conclusions are that mind-building in general goes on rather like body-building in general, or movement-building in general. For abstract geometrical notions show an appeal (at the age of

¹ One-time Professor of Education in London University.

THE INNUMERABLE INSTINCTS OF MAN

seven) no less deep than arithmetical ones. They have only to be shorn of our usual technicality of expression to find an immediate response in the child-mind.

To understand this we have to remember that the technical form in which geometrical truths are usually presented is due very largely to our pre-occupation with logic. This overlays our preoccupation with geometry. For a fact often forgotten is that the proofs of Euclid are a kind of marriage between two separate sciences, the science of geometry and the science of logic. Geometry is a system of spatial truths which exist. They exist apart from us, and whether we know about them or not. How do we come to know these truths? Partly by observation, but mainly by reasoning. We reason (or prove them) when observation is insufficient.

But reasoning is a mental process, and we may take a separate delight in studying and dissecting that process. This study—the study of reasoning—is logic, and really it comes nearer to psychology than to geometry. Yet geometry offers an exceptionally happy field for its exercise. We do a piece of geometrical reasoning, and then we turn back on ourselves to see how we did it. We write down this bit of self-analysis, calling it the proof. The reason why geometry provides so convenient a field for this practice is that no other complications exist to vie with it. There is no fitting together of apparatus or cleaning of test-tubes, as there is in chemistry. We need not even draw with great accuracy. Enough to make crooked lines on a piece of paper, and imagination perfects these to give the facts on which reason is

DEVELOPMENTAL INSTINCTS

to operate. But thinking occurs just as much in other fields. It occurs just as much in physics or geology as it does in geometry. Why don't we bother to formulate our thought in these sciences also? Here we are content merely to think. It seems to be hard enough. But in geometry we make a great to do, not only about thinking, but in thinking about thought.

To think is one thing; to think about thought quite another. Many people can think, and think quite correctly, but they would not succeed so well if they tried to think about thought. The cook "thinks" when she decides that a smell of burning, which she notices at the top of the house, means the milk is boiling over in the kitchen. But it needs a logician, an experienced thinker about thought, to see that what she did with her mind was a piece of "syllogistic reasoning," as follows:

(Under ordinary conditions) a smell of a certain kind is always the smell of burning milk

This smell is a smell of that kind (smelt under ordinary conditions)

Therefore it is the smell of burning milk

The logician can in this way reduce her thinking to a well-known formula, but for the cook it was enough to reason correctly and rush to her saucepan.

"How did you know?" says Dr. Watson to Sherlock Holmes. Then follows a skilful account of Holmes' deductions, which all admire. Euclid is a bit like that. A psycho-analyst might call him "narcissistic" —a person who admires himself. But fortunately most of us can reason without knowing or caring how we do it. We are hardly more conscious of it than of the muscles we use when running upstairs. A child is

THE INNUMERABLE INSTINCTS OF MAN

like this too. He can reason very well. And in geometry he finds it no harder than elsewhere. But are we to expect him at the early age of seven or eight to be also a logician? This may come later, but at the moment he is satisfied to be in the stage of those early thinkers who preceded Euclid, and who never dreamed of writing down a proof. These gentry discovered many truths, which Euclid later systematised. But all they did was to draw a diagram showing the truth they had discovered, and beneath it they wrote the single word, "Behold!"

Logic met geometry, and married it, later in the history of science. The history of man's own path of discovery is often a good guide to children's mental progress, so why not let the child "geometrise" first, and teach him logical analysis later in his life—at a stage when it too may have a fascination; for it certainly has one when we are more mature. It is very thrilling to see how all the higher truths of geometry can be reduced to a few obvious assumptions, which they repeat in various fashions; but this is a thrill derived not from the truths themselves, but from the fascination of seeing intelligence at work.

We are much too apt, in educating children, to give them our own latest triumph, regardless of the fact that it may be a product of maturity in many different departments, some of which they have not yet reached. We do the same in statecraft—imposing, for example, democracy on a subject race which has not even absorbed the rudiments of honest dealing.

Euclid's proofs are one of the most brilliant achievements of the grown mind of man, but it does not

DEVELOPMENTAL INSTINCTS

follow that in that form they are suitable for the child. They need taking to pieces and presenting part at a time.

The Montessori experiment has not yet gone far enough to find the later (developmental) level, where interest can be felt in logical thought *per se*; but children below eleven show a geometric interest as keen as the arithmetical one. True, they are helped with concrete bits of metal cut in the shapes of the well-known figures. Figures like these they cut out with scissors from sheets of coloured paper, gumming them into albums, to show the equalities they have noticed. Thus they form a kind of wordless notebook of truths discovered by themselves.

Once again, none of this has any relationship to real life. They are not measuring land, or calculating the volume of tanks. Just as in arithmetic the interest is in abstract truth, though applications to life may always be made, once the principles are established. All this "furnishing of the mind" seems, in fact, to be a childish work carried on *per se* and without reference to ulterior benefits. Abstract ideas are later to become the "instruments" of thought. Here is man furbishing up his tools, just as the bird sharpens her beak or her claws. Does either know why?

If this be true of the intellectual life, may it not be equally true of the sub-intellectual life, of that earlier period in which the child combines intelligent activity with activity of his senses, to form what are known as "perceptions"?

Perceptions are commonly considered to be mental formations requiring a long period of elaboration.

THE INNUMERABLE INSTINCTS OF MAN

The individual has not only to see and to hear, but to fill out and give body to what he sees and hears, adding to it from his own storehouse of remembered experiences. Itard's story of "The Savage of Aveyron" has much interest here. It is re-told by Montessori in her book, "The Montessori Method." A young boy was found wandering in a French forest, where apparently he had "brought himself up," without any contact with people, or with civilisation of any kind. He was speechless, and apparently deaf. So he was sent to Itard, a specialist in the education of deaf-mutes. Itard tested his hearing. It seemed to be absent. Even a pistol fired near his head brought no response. But some people in a neighbouring room were having lunch, and someone cracked a nut. Immediately the little boy looked up. A perception was able to rouse him, where the most terrific sensation did not!

Sensations which, without perception, are mere stimuli become, by its aid, perceived objects. The difference is that between interpreted signs and uninterpreted signs; between an unknown or foreign word heard on the telephone—a mere sequence of sounds—and a word recognised and given a meaning. This meaning may be so vast that it predominates at once in consciousness over the mere sounds of the word.

Now perceptions can only be formed by activity, by the continued action of the whole personality in its general experience of life. In other words, "repetition" will be necessary to the formation of a percept, just as it is to the building up of a new co-ordinated

DEVELOPMENTAL INSTINCTS

movement. Indeed, there is much psychologically in common between the learning of co-ordinated movements and the formation of perceptions.

Is it for this reason that the Montessori child at an early age (below 5) shows a disposition to repeat the experiences of simply looking, or of simply listening, of comparing and judging differences between objects; especially between objects which need an effort of attention to distinguish them? These "perceptual" activities have no relation to ordinary life, yet they grip the child more than most activities of ordinary life. To arrange coloured spools in similar pairs, or match bells of equal note certainly attracts the child of three more strongly than ordinary play—though not more strongly than the "housework" exercises (which are kindred activities in the realm of movement). If the human baby has to "learn" to see, hear, touch, etc., just as he has to learn to walk—meaning, of course, that he must learn to "perceive" what he sees, hears and touches—then it may be that he instinctively chooses activities which help him in this work. Experience with these children almost seems to indicate a separate instinct for the education of each sense. For how, if not by instinct, can one account for activities so intense, so continuous, so purposive, and yet of which the ultimate value to life is so obviously hidden from the doer?

I do not wish to adjudicate on such things. It is enough here to record facts and indicate that growth has numerous instinctive facets; that it is rich in instinct, and that detailed activities, precise selections, are of its essence—just as in the world of nutrition.

THE INNUMERABLE INSTINCTS OF MAN

Indeed, the analogies with nutrition are very close. There are phases in the child's work corresponding to hunger (when the child is obviously "searching for suitable work"); there are phases corresponding to satiety, when he has done enough work for the time being. This is followed by renewed work-hunger later on.

It often astonishes people to see in the mental life of children a renewed hunger for the *same kind* of work. We think a child who is tired of pairing colours to-day will surely want a fresh exercise to-morrow. But it does not follow. Were it just a matter of porridge, or eggs and bacon, we should not be surprised. We should explain it by a "return of appetite." But it happens that in our own mental life we are always "going on"; directly we have understood one idea we are ready for another; and we expect children to be the same. But in reality we differ from them in this because we are mature. We are no longer forming our powers. We are using those already formed. We are no longer practising walking or reading. We walk to get somewhere, read only to understand. There is no need to practise an accomplishment once it has been perfected. Use replaces practice, variety replaces repetition.

Thus, the child when learning to count, counts and counts till it becomes so easy for him that he never goes wrong. But after that he stops counting "for fun," and in future he will only count when he really wants to find out something: how many people are present, how many trees there are in this wood, etc. It is really because we are in this latter stage—because

DEVELOPMENTAL INSTINCTS

numbers, for us, have become boring—that we think numbers can only interest children when wrapped up in talk about shops, or that a “project” must be started in which all the class will build a battleship, so that *incidentally* it shall be found necessary to count the rivets that will be needed, etc.

Education based on scientific observation (or *on observation rendered reliable by its conditions*) has dismissed this. Incidentally, it has revealed in children a wealth of instinctive life, of spontaneous and accurate choice, of which no one previously had any idea. This is “discovery”; it is a discovery like any other, for example, the finding of oil—and, like the finding of oil, it has immense potentialities for the welfare of men.

To take one final example, puberty is the sign for quite a new set of interests to awaken. The child at the threshold of manhood becomes predominantly social. Whereas he was mainly intellectual in the period seven to eleven, and mainly motor-sensorial before that, now he becomes a person able to adopt high social ideals accompanied by deep feeling. The urge is to leave home (not entirely, but for long spells), to see other neighbourhoods and places; to contact nature in the way that man at grips with nature contacts it; to sleep in the open or under canvas; learn a trade, make a little money; work out for oneself a philosophy of life and of morals; realise anew, or study afresh, the truths of religion; to form, in short, one’s “character.” The great physical changes of puberty make the intellectual life of school unsuited to this period. All schoolmasters know that

THE INNUMERABLE INSTINCTS OF MAN

the mind goes to sleep; instruction is wasted on it. But the success of the Scout movement shows that something else is very much awake. It is the social sense, an uprising of idealism, of the emotions peculiar to adolescence. Solitude appeals: a new feeling of "oneness" with life, the countryside, beauty.

No doubt a reformed pedagogy must learn to correspond with this, and detailed experiments have yet to be made, experiments completely obstructed to-day by the compulsory school system. But enough is known to say that these would be the main forms of the period were spontaneous choice to be given its head. Large camps would have to be formed. Children would need the supervision of a trained and selected staff, the organisation of work would follow trade lines, making use of local conditions (fencing, well-digging, harvesting, etc.) Children should have the feeling of earning something by their work, and the child's interest in philosophy and religion should be specially met.

In three years or so, when the physical changes are complete, there would normally be some return to school—education being completed round about the year of eighteen, when manhood is truly reached, when mating could occur and when economic independence should be possible. Higher education, in fact, should not mean the postponement of economic independence, with its consequent arrest of character-development, but it should be open only to those who can support themselves while taking it. This the truly superior mind is able to do.

But the details of this picture have still to be filled

DEVELOPMENTAL INSTINCTS

in—filled in with experimental work, following the lines already begun, wherein the study of children's interests is rendered reliable by the non-oppressive methods used. An educational regime is thus made to fit the child, instead of vice versa.

As it is pieced together, this regime actually "brings out" more and more of the child's true nature. For obviously the hidden side of a person must remain hidden unless conditions enable it to show itself. Pedagogy is the science which endeavours to establish those conditions. They are conditions favourable to the hidden nature revealed, and are therefore in a sense determined by it. Thus two researches have to go hand-in-hand. Two inseparable sciences must grow up side by side: child-psychology and child-pedagogy. The first steps in pedagogy are guided by observation of the child. This is psychology, but the new bit of pedagogy, when put into practice, enables more psychology to reveal itself, and this in turn gives the clue to more pedagogy, and so on. It is a delicate double work demanding high gifts on the part of the observer, who must also be an inventor. But this need for exceptional qualities it shares with other sciences, which are by no means so "democratic" as commonly supposed. Many can follow, but few lead. Only in the hands of genius does the scientific method ever really bear fruit. In the hands of others it merely leads to the formation of societies and the publication of abstruse papers.

Indeed, it is significant that whenever something really important is discovered a fresh society has to be formed, since the existing ones—though ostensibly

THE INNUMERABLE INSTINCTS OF MAN

desiring new knowledge—can never assimilate it. This has been shown very clearly of late years in the field of psychology. Freudians will go to the poles rather than hold a congress in unison with other psychologists. Montessorians also have found it imperative to hold their own International Congresses, away from those of other educators.

These facts, in the writer's opinion, do not make the methods of research used by these two originators any the less scientific. They rather confirm their importance. Both Freud and Montessori, he would maintain, are using reliable methods of psychological research, though different ones, due to differences in the material investigated.¹ The Montessori technique enables *normal development* to be studied by *direct means*, while the Freudian technique enables *symptoms* to be studied and treated which result from the *failure to develop normally*.

But although in the field of normal development vast areas still lie open for further research, enough has been done to disclose an abundance of new facts which all psychologists will have, sooner or later, to face. I know that this is an educational field, and, as such, its detailed description lies outside the scope of this treatise. But the very fact that broad changes have been proven in the child's interests in different periods of his life means that we are here contacting instinct; it means that the details of developmental instinct are being studied. These details are undoubtedly profuse, and that means we must abandon

¹ I have expanded this view in the Introduction to my “ ‘Chemistry’ of Thought ”

DEVELOPMENTAL INSTINCTS

for ever the conception of a vague nebulous instinctive life for man; we must cease to talk of simple generalised instincts with single names. Instead, there must be imagined a tree-like bifurcation of instinct, a tree whose branches we may never fully know but one which exists as an object for study. It exists like the nervous system of man exists, as an object for continued exploration and research.

CHAPTER VI

Perversion: Instinctive or Intelligent?

I now leave the "developmental instincts" to turn to a third group, "the reproductive instincts." Here again, the plural form is more accurate than the singular. There is no single "sex instinct" or "reproductive instinct." That is a phrase corresponding to nothing: it is an empty figure of speech. Instead, there are numerous tendencies to act in particular ways, all of them connected with, leading up to, or following reproduction. Action is our guide Actions we can observe. Instincts we can only infer

Unfortunately (for ease in our statements) there are actions mixed up with the sexual life of man which are not connected with reproduction, but independent of it. (These are the perverted actions of sex.) Psychologists using the old terminology often regard these as prompted by a supposedly general "sex instinct." (Perverted actions are said to be "manifestations of the sex-instinct") (no less than actions connected directly with reproduction.)

But all the instinctive actions so far noted have been purposive. The purpose is usually so obvious that one does not have to twist one's brain in order to see it. No dispute usually exists as to what it may be. Perverted actions, on the other hand—though recently justified in tortuous fashion by certain modern people—are commonly regarded not only as biologically purposeless, but as actually harmful to those who practise them; and this at once makes them suspect as candidates for the instinctive title.

As to whether they are harmful, I propose to take

THE INNUMERABLE INSTINCTS OF MAN

no sides; not because I hold no views, but because this is no place for a dog-fight. I am here concerned only with one object, namely, to determine which actions of man are instinctive and which are not.

Let us suppose that the various sexual actions of perverted type are not instinctive: what else could they be? They must be either intelligent or reflex.¹ I have had it put to me by an experienced Catholic confessor that just occasionally a masturbation may occur reflexly. But this is not the commonest case. On the other hand, directly we ask whether masturbation is intelligent, we obtain an unequivocal answer very easy to accept. In the first place, masturbation is peculiar to the higher, i.e. the more intelligent species. It is only observed in man, in some apes, in horses, in dogs and in cats. But much stronger indications are these. Intelligence is *always* present when a creature consciously adapts means to an end—to an end which he has well in view. (Also it is implied when the means chosen to the end are variable, i.e. are not fixed from one member of the species to another.)

Now, in the typical masturbation there is not only an end held distinctly in view, the production of sex-pleasure, but the means chosen for this are various; nor can we say that the being who chooses them does not regard them as means to the pleasure sought.

¹ For psycho-analysts I may say that this is a question quite apart from whether they are "compulsive". On a later page (142) I shall show that the wholly instinctive actions of man are never compulsive! "Compulsion" is an abnormality of neurotic origin, and actions of high moral principle can become compulsive as easily as perverted ones!

PERVERSION: INSTINCTIVE OR INTELLIGENT?

This being so, the act is typically intelligent. It is a calculated action—cold-blooded almost! Indeed, it may be very interesting for those who regard perversion as harmful to find that intelligence is the criminal, and not instinct, as all the world has for so long supposed.

Such a view agrees, further, with the discoveries of Freud as to sexuality in the infant. The little child, he says, is "polymorphous perverse," meaning that his perversion may take any form. Many regard this as a hard saying, not only hard on the infant, but a bit hard to believe, since one cannot see what good purpose is served by children being naturally perverse. But if we remember that children are intelligent, the statement (deplorable or not) becomes less hard to believe. At least we are saved from having to assume that here there is an exception to the general rule of purposefulness in instinct.

The writer believes that instinct has been maligned a good deal in this matter of sex-abuse. One might as well call eating to excess, or drug-taking, a manifestation of the "nutritive instinct." We know nowadays a good deal about the origin of abnormal cravings. They derive mostly from emotional disturbance. Psycho-analysis itself has unravelled many of the tangled skeins leading to them. We know, too, that masturbation occurs much more under abnormal conditions than under normal conditions. Imprisonment is a prolific pre-disposing cause. Indeed, if one can believe certain studies recently published, the modern prison might almost be called a "Masturbator's Paradise." Reflection must confirm this,

THE INNUMERABLE INSTINCTS OF MAN

for not only is a prisoner "thrown back on himself," but social responsibility has been, at the same time, removed.

Curiously corroborative is the fact that when the higher animals masturbate it is *always* under conditions of domestication or captivity. Children in rich homes are more subject to it than children in poor homes. The latter lead a more active life. Children of the wealthy are constantly put to bed before they are tired, and this is a physical cause second only in importance to the prolonged sitting-posture forced upon adolescents in our schools.¹

But, setting aside predisposing causes, what is the mechanism by which intelligence enters to play its part? The great business of intelligence is to find ways of achieving ends. Its work in life is to be inventive. The end in view may have derived direct from instinct, or it may have been derived by deviated paths. The objective may be to earn one's bread or to satisfy an abnormal craving. But whatever the end in view, the business of intelligence is to find the way. It is like a dog faithful to its master, be he owner or thief, vagabond or respectable citizen.

To put it briefly, we do not normally set our intelligences to work until we desire something. We use intelligence to get round an obstacle, but only when this stands between us and a goal we are anxious to reach. Intelligence is a lamp lighting man to his ends, and it does this whether those be set for him by legitimate instinct or by the perverted desires of abnormality. This agrees with a classic view held by

¹ See Montessori's "Pedagogical Anthropology"

PERVERSION: INSTINCTIVE OR INTELLIGENT?

scholastic philosophers, namely that the will is not free in its choice of end, but only in its choice of means to attain that end. Thus, it is free to choose an honest or dishonest path to an end desired, or to refrain from action if the end is seen to be bad, or if no path is open except a dishonest one. But the end which a man desires is fixed for him willy nilly.

Viewed in this light, we see that every normal action (unless it be reflex) has two component parts, one instinctive, the other intelligent. The instinctive component provides the motive, the intelligent component finds the way.

But the perverted action has a composition of the following kind. The end is no longer an end dictated by pure instinct acting in its usual fashion. The man is not just working to keep his wife or to bring up children whom he loves. But a physical function—for example, the function of eating or of sexuality—is diverted to some end which it does not normally serve. The glutton, by over-eating, may be deriving an indirect gratification of his frustrated love-impulses. Men take to drink, or drugs, under the influence of grief. A real shift of function has occurred, comparable to the "compensations" of disease, when one organ takes over the work of another. Nearly always (psycho-analysis has shown) "excess" is psychological in origin. But one cannot say that the normal purposes of eating are being achieved by the glutton, or of drinking by the drunkard. What has brought about the transfer? It is intelligence. (The instinctive component of the action has been *enabled to make use* of some other function than the usual one, in order to

THE INNUMERABLE INSTINCTS OF MAN

gain its ends. The true instinct which should be governing that organ is temporarily out of commission. Intelligence has given it a different master!

In sex-abuse intelligence is employed not only to devise means of obtaining pleasure, excitement, a "substitute for adventure"—whatever it is that is being sought—but often it is used to find ways of dodging childbirth. Naturally, it remains limited to the higher species, since the intelligence of lower ones is insufficient to wrest the sex-function to these other purposes.

Actions truly initiated by instinct commonly form chains, one following upon the heels of the other, and each preparing for the next; for example, courting gives way to co-habitation, and that to the loving cares of parenthood, etc. But a striking feature of the perversions is their constancy. As Freud says, the form given to the perversion of the child may remain always to determine that of the adult. "The unconscious is everlasting." Abnormal drug cravings also remain constant. Here, then, is something more resembling what the psychologist calls "fixation" than instinct. In fact, such cul-de-sacs are often associated with arrests of development.

The nature of instinct is to seek an unknown end and to seek it, often, through privation and suffering. Remember the eel swimming the Atlantic, the migration of birds, or the lioness defending her cubs. McDougall was the first modern psychologist to recognise this factor in human affairs; and although his analysis differs widely from this, it came, none the less, as a welcome relief to the crude pleasure-pain

PERVERSION: INSTINCTIVE OR INTELLIGENT?

theories of eighteenth-century philosophers, who held that man's tendency to seek pleasure and avoid pain could account for the whole of his conduct.

No one seeing parents go short of food for the sake of their children can believe they are thinking of themselves very much, nor aiming primarily at the pleasure of seeing their children grown up. If ever self-conscious motivation of this kind does happen it is pathological. A wealthy mother once wrote of her daughter, just grown up, "She has had to be put away, poor child, but I am bearing it bravely!" One wonders how far the calamity to the daughter was caused by this self-centred attitude on the part of the mother? Indeed, there is only one part of the whole sex-panorama in which pleasure is the primary inducement and sole gain; it is the realm of perversion. It often happens in history that the solemn beliefs of one period become the jokes of the next, but surely it is more than usually impressive to find that perversion was once made the basis for a complete philosophy of life!

All admit, further, that the sex-life presents one very peculiar phenomenon, which bobs up unexpectedly amid a very welter of perversion. It is a phenomenon often fraught more with pain than with pleasure—the phenomenon of love. See where this leads, and understand why so many philosophers have averred that any sane man will avoid it! But love leads to co-habitation; it leads to the family; its biological purpose is plain as daylight. In the whole panorama of sex-activity no other force can be seen of sufficient precision—of sufficiently perfect

THE INNUMERABLE INSTINCTS OF MAN

adaptation of means to end—to be dignified by the name of instinct. Love is the true "sex-instinct." The rest is merely "sex."

CHAPTER VII

How Instinct is Aided by Intelligence

THE signs of instinct are all fulfilled by love—even that most extraordinary one, when an action robbed of its biological purpose still persists. What romantic attachment breaks just because one of the two partners has become sterile? One of them may have an operation, producing admitted barrenness, and still the home is formed. There are just no children. A super-being, knowing the purposes of love, might say, "Foolish creatures, to go on with actions that can bear no fruit!"

Indeed, when we ourselves observe in a lower creature precisely the same behaviour we laugh. Fabre's spider, which lavishes on a useless piece of cork the same affection that nature gives her for the pill containing her eggs, seems to us the stupidest of creatures.

Mark that word "stupid." It leads, like a magic thread, through the vast modern labyrinth of printed words, to the heart of one of the great problems of psychology, the problem as to how instinct is related to intelligence.

I have already mentioned an amazing Wasp-story told by Fabre, a story that every student of instinct must bear in mind. There is a Hunting Wasp, which first constructs a small cell with pellets made of clay, then begins to fill it with small spiders. Her usual procedure is to catch and incapacitate these by stinging them. She lays an egg on the first, then covers it up with more spiders till the cell is full. But

THE INNUMERABLE INSTINCTS OF MAN

these carry no egg. She then seals the cell and goes away. The collection of spiders evidently provides the newly hatched grub with a plentiful larder. Just as the grub of a bee lives on honey, so does the grub of the hunting wasp live on these spiders.¹

Fabre tried an interesting experiment. He saw one of the wasps bring her first spider, lay an egg upon it and fly off. While her back was turned he extracted this spider with its egg, thus leaving the cell quite empty again. Shortly the wasp returned bearing a second spider, and Fabre was curious to see whether she would lay another egg on this, or leave it without an egg. That is to say, would she carry on mechanically with her usual plan or replace the missing egg, without which any more collecting of spiders would be useless?

Much clearly hung on this observation. Did the wasp collect spiders intelligently, knowing their value as food for her grub, or was she acting quite blindly? Was she interested only in collecting spiders, without giving a thought to their use?

After all, if this were so, she would merely resemble a gentleman eating his lunch, a thing he does without giving a thought to its fate, without reflecting that this lunch will be digested by chemicals specially secreted to welcome it, that it will enter his blood-stream and finally provide a meal for certain living cells. When a gentleman eats, it is not with this end in view at all (even if he knows about it), but just because he is visited by a vague feeling of hunger

¹ Whether they are killed or paralysed (as Fabre thought) has been questioned. But it is immaterial for my present purpose

INSTINCT AIDED BY INTELLIGENCE

which quickens into a motive when he sees the food before him.

So the wasp. *Fabre* found that having performed one act of her cycle, the laying of the egg, she went on to the next, and for her it was an end in itself. Undeterred by the mystery of the vanished egg, she proceeded according to plan. She deposited the new spider, *with no fresh egg upon him*, and went in search of more.

Fabre, much struck by this, took away the second spider. Would she this time be led to reflect? Not she. Momentarily shaken, but undismayed, she deposited her burden and departed for more. The indefatigable *Fabre* removed with his forceps spider after spider. He took away many more than would have been needed to fill the cell, and still she brought others. When would she grow tired? Intelligence still refused to function. Her business was to fill this cell, and fill it apparently she must. Her next action would be to seal it, but the cue for this could only come when it was once filled.

In the same way, one of us, having eaten, would possibly lie down to digest; but if some demoniac surgeon filched away every mouthful after it had passed our gullet, we should never reach the stage of feeling this desire. We would remain hungry, and go on eating.

For very weariness, says *Fabre*, the wasp ultimately turned away, sealed the cell in haphazard fashion, and flew off, no doubt to start another. Thus nature can save a creature from expiring at the hands of instinct by the introduction of fatigue.

It is a matter of much interest that Sherrington

THE INNUMERABLE INSTINCTS OF MAN

noted a similar thing when studying the interference between reflexes in his experiments on decerebrate dogs, to which we have already referred. In this case the spinal cord has been severed just below the brain.¹ He found that many reflexes can combine together, but a special problem arises if two incompatible ones are excited at the same time, since they cannot both occur. Drawing up an injured foot cannot coincide with pressing down the same foot, as in walking. Both these are reflexes, and occur mechanically in response to appropriate stimuli; for example, a prick causes retraction, steady pressure on the sole of the foot, extension. If both were simultaneously excited, and both tried to occur, there would be a clash of muscular contractions. The limb would go rigid; hesitating or palsied movements might set in. It is very clear that this must be prevented at all costs. Creatures in ordinary life are being simultaneously excited by countless stimuli, so an appalling confusion would result had no provision been made for the solution of this problem. While it is one thing to endow an animal with numerous reflex mechanisms, it is obviously another to inspire harmony between them.

This second requirement of reflex organisation has received less attention than the first, which has been much more fully studied, and figures disproportionately in philosophical talk. Sherrington's experiments were the first to shed any scientific light upon it, and very illuminating they were.

¹ See Sherrington's "Integrative Action of the Central Nervous System."

INSTINCT AIDED BY INTELLIGENCE

One of the facts which emerged was a kind of "hierarchy" among reflexes, by which the less important always gives way to one more urgent. It does not just give way, it is entirely wiped out. Nature evidently prefers one perfect response to two faulty ones. Hence the less important reflex just becomes non-existent, while the more important is in action. It gets inhibited in much the same way as a telephone caller gets inhibited when someone else is using the line. The phenomenon is known as "prepotence." The prepotent reflex inhibits the other.

Now, when a prepotent reflex has become fatigued by repetition, it automatically gives way to one lower in the scale. This is now allowed to "butt-in" and replace it.

Great importance clearly attaches to this part of Sherrington's work, though teachers of psychology seldom stress it. Fabre's observation, above narrated, shows that something similar can happen in the field of instinct, since here is displaced a fatigued instinctive action, which looked like remaining dominant for ever. The same problems of conflict must, in fact, arise with instincts as arise with reflexes. Why not expect the same arrangements for dealing with them? In my book on the Will,¹ I have shown how very fertile is this idea when used as an hypothesis for solving the higher problems of motor organisation; the problem, for example, of how harmony gets established between rival *motives*. It seems to throw light on the whole question of how the "will-function" works.

¹ In preparation.

THE INNUMERABLE INSTINCTS OF MAN

Fabre's often-repeated story of the "Processional Caterpillars" provides another perfect illustration of this "fatigue to the rescue" of a creature otherwise caught in the chains of instinct. These caterpillars follow one another head-to-tail along a path of silk which they have themselves laid, and which guides them home after a marauding expedition. Fabre closed the circle on the edge of a flower-pot, and they walked round for three weeks before some began to fall out of line. The fatigue of these saved the others.

But not all creatures are so mechanical as this. Birds whose nests have been destroyed, or even disturbed before the hatching of the eggs, do not go on as if nothing had happened. They build anew; the female lays a new clutch and starts sitting afresh. Edgar Chance¹ found that certain species would do this many times in a season, though normally they rear only one brood.

On the other hand, the bird, too, has limits in this "power to go back." My friend, M. Portielje, Director of the Amsterdam Zoo, has described how the heron, if she should be carrying a branch for nest-building and drops it, goes back to fetch another one. "Why," he says, "should she not follow it to the ground and pick it up? This manœuvre is well within her powers —it would save her much time and trouble. But no, she goes all the way back to find a fresh branch." It is clear that to get the dropped one would be too great a departure from her fixed routine.

Let us now make a generalised diagram to represent

¹ Op. cit.

INSTINCT AIDED BY INTELLIGENCE

any chain of instinctive actions. By a row of fixed dots we represent the ends which the animal desires, one after the other.

A B C D
• • • • •

The points A, B, C, etc., might represent mating, nesting, laying eggs, hatching them, feeding the young, sending them away when mature, migrating, etc., in the case of the bird, while in the case of the Hunting Wasp they would represent choosing a warm site, fetching pellets of clay and building the cell, catching, stinging and depositing the first spider, laying an egg on him, filling the cell with other spiders, closing it with more clay, etc.

Always these actions must follow one another in a fixed order, and always must each one be complete before the next is begun. The animal seems unable to contemplate the next till he has finished the one before, and he never seems to regard it as a means to an end, but simply as something to be accomplished in and for itself. "Art for art's sake," he might say, or rather, "nest for the sake of nesting, lay for the sake of laying, sit for the sake of sitting, and feed your young because you like feeding your young."

These preferences in that order absolutely fix the sequence of actions. No departure from the routine is possible. Hence these points are *fixed characters* for any given species. They distinguish it as surely as the colouring of feathers or the shape of wing. Departure is only possible *between* the fixed points.

THE INNUMERABLE INSTINCTS OF MAN

But here we notice a very interesting thing. Departure *always does take place* between these fixed points. Here all is variable. We cannot represent the animal's behaviour by a row of dots. We could only use a wavy and fluctuating line, for the animal is *left free* here.



In fact, he chooses his path. The bird flies here or there to gather food. The wasp seeks for damp clay, which she will roll into little pellets before carrying them to the cell she is building. Where is she to find this clay? She must search for it. If not here, it may be there. How do we account for such varied, and yet such directed, action in a creature so stupid? There is only one way. *This must be by intelligence.* In between his fixed instinctive points every creature is intelligent. These are intelligent actions, because the creature foresees their end, and desires them accordingly, relating them to that end.

The difference between the intelligent creature and the instinctive creature, therefore, becomes clear. There is no intrinsic difference. Both work for instinctive ends by intelligent means. But it is true that some are more intelligent than others, and some less intelligent. In the less intelligent the dots representing fixed actions are much closer together. There are more of them. In the intelligent they are farther apart, and they are fewer. The more intelligent

INSTINCT AIDED BY INTELLIGENCE

gent creature, in other words, sees further ahead. He is left to find more of the means for himself. The gaps are not filled in for him so fully.



HIGHLY INTELLIGENT ANIMAL



UNINTELLIGENT ANIMAL

But always there comes a point beyond which the most intelligent creature is not looking. Even in man himself the care for the family is not dependent on some far-sighted vision of man's future destiny on earth, but only on love and tenderness for those particular children themselves. One is always pre-occupied with the next fixed point. What is more common than for courting lovers to say that consummation is far from their thoughts? From the depths of debauch men may enter this condition and murmur with the ardent Dante, "Twere sacrilege to dream to wed her." Yet success in courting will launch a man into feverish work to collect the wherewithal to found a home; and just here instinct forsakes him. Only intelligence can show him the way.

It is therefore clear that the same diagram projected forwards (i.e. with fewer dots and larger spaces) will serve for what is usually called an intelligent animal,

THE INNUMERABLE INSTINCTS OF MAN

and projected backwards (with more dots and smaller spaces), it will serve for those at the opposite end of the scale, for animals reputed to be wholly instinctive. At the very extreme of this we come to the individual cell, which may, as suggested earlier, be the ultimate seat of instinct, and which may, for all we know, be wholly instinctive; that is to say, the dots for the cell touch. But in higher creatures, even caterpillars, however close the dots, there are still some gaps between them, and these have to be filled in by unfixed, or variable, action. The function responsible for guiding this action may be of vanishing quantity, but it cannot be different in quality from what appears as intelligence when the gaps are longer.

It follows, further, that the smaller the gaps and the more numerous the dots, the less room is there for variability of action, and therefore for ingenuity and progress. Man, with his very long gaps, can progress indefinitely in his manner of arriving at his various fixed ends. He still loves, and wants to bring up children; he still has a need to eat; and these remain permanent driving forces, constant as his form, colouring, or weight; but intelligence, in his case, so far exceeds that of the highest animal that he can pass on discoveries by a language spoken and written, so augmenting and expanding from one generation to another the means he uses to attain these ends

This very power may determine in him a cycle of actions which almost looks instinctive, since it repeats annually, and each item in it prepares for the next. Thus, a man, his son, and his son's son may annually plough, sow, reap, thresh, etc., in that order, and he

INSTINCT AIDED BY INTELLIGENCE

may finish each operation before beginning the next; yet he is very different from Fabre's caterpillar, which wishes first to cut out leaves, then to sew them together, and then to cover its body with them like a dress. When men dress themselves they do the same thing, in the same order, but they do not do each piece *for its own sake*. They wish to be clothed, and they choose these means to that end. There is a jump in desire right to the end of the chain. But the caterpillar has the means given to him. His desires go in a succession of small jumps. He has no wish for, nor notion of, the ultimate end—even though it be his own protection from birds. The caterpillar's action is like ours would be if we had a passion for letting down steel nets round our battleships without knowing anything about torpedoes.¹

When a creature passes from one section to the next of his instinctive chain, it is as though his instinct itself had undergone an alteration. Sometimes, though not always, this change of instinct is accompanied by a change of physical form. It has now been shown (an expansion of this is given in Chapter IX) that the human father, as well as the mother, undergoes physical changes with the onset of parenthood. The eel changes its form before dashing off on its return voyage across the Atlantic. But the Hunting Wasp shows no change of form when she passes from filling her cell with spiders to sealing it up and starting to build another.

¹ This whole conception of the relationship between instinct and intelligence was first published by the author in the journal *Psyche*, 1927. It also appears in his "Intelligence and Mental Growth" (*Psyche* Miniature Series).

THE INNUMERABLE INSTINCTS OF MAN

With these changes of instinct, it is more than likely that there go, also, changes of intelligence, but this will take us into deep water, which needs a special chapter.

CHAPTER VIII

Are there Different Kinds of Intelligence?

RECENT studies of animal intelligence have given rise to the suspicion that animals differ not only in the amount of intelligence they display, but in the kind of problem they are good at solving. In other words, there may be differences in the *quality* of their intelligence, apart from its *quantity*. Indeed, the above views alone must lead one to suspect that each creature will be good at solving the kind of problem it is most likely to encounter, and when we reflect that to solve problems means very largely to predict consequences, and that a consequence is always the effect of causation, we see at once that *different types of causal relationship* will be encountered whenever the creature makes the acquaintance of a *different type of problem*.

McDougall, as a result of recent experiments, has maintained that it is unfair to present an animal with a human problem; of course he cannot solve it; but give him one in his own realm and he may manage it quite easily.

The truth is that if we try applying our own minds to an animal-problem, the same thing often happens. They can solve problems that to us would be insoluble! I have often wondered how a cat would plan her leap in order to reach a place which I knew she could reach, but which looked to me particularly hard for her. I had to wait for the cat to enlighten me, and when she did so, it was by selecting a route I had quite overlooked. I have watched a cat faced with a difficult jump study it from all angles before making

THE INNUMERABLE INSTINCTS OF MAN

up her mind. Evidently she reaches a conclusion of the type "I *can* do so-and-so," after several times deciding, "I *cannot*," or even after comparing one risk with another. These are clear perceptions of causal relationship, for she has never made this jump before. Indeed, the problems which face a cat are very different from those which face a human being. One of the commonest is, "Will this surface I wish to tread on support my weight?" It may be a tea-tray, delicately poised, and cats of experience seem incredibly anxious to make sure. One sees them delicately testing a newspaper or a cushion with one paw before taking the risk.

Has not a caterpillar its own problems, different from those of a cat? Has not a bird its own, etc.? And *has not each to face different problems in the different phases of its life-cycle?*

As a result of talking to people about this, I have formed the impression that one has to busy one's mind a good deal about the general problem of "cause and effect" before becoming familiar with the idea that there are causal relations of many diverse types. For example, steam-pressure differs greatly from water-pressure and from the so-called electrical "pressure" which drives a current. Each has its own way of behaving, its own laws. How objects move in space, or how a ball will bounce, are other types of causal relationship. Before one can solve problems in any of these fields (i.e. predict consequences in it) one has to know a good deal about those laws. This knowledge may be intuitive, by which I mean largely "unconscious of its origins"—though very likely

ARE THERE DIFFERENT KINDS OF INTELLIGENCE?

bought with experience; or it may be highly instructed, as in the case of an engineer. But in daily life we are constantly making use of such knowledge. The oarsman has it in his rowing; the cricket-player has it; the servant uses it when she makes your bed—a knowledge of how materials fold, etc.

How do we acquire such knowledge? By what psychological function does the mind deal with this aspect of its experience?

By far the greater number of problems which are said to be problems solved by intelligence, are problems in cause and effect. In practical life this is the most important of all the so-called "relationships" listed by the philosophers; it is more important than the relationship of "likeness or difference," of "identity" and the rest; indeed, it is a moot point whether the others cannot all be expressed in terms of it.¹ All agree that mind is somehow capable of dealing with relationships—that is to say, we do not merely apprehend things, but also the relationships between things. So evident is this that some maintain we should never be able to separate one thing from another in our minds unless we had first apprehended its relationship to other things. In other words, the relations are apprehended first, and the idea of a "thing" is deduced from these!

This would mean that our idea of a "thing" is the psychological apprehension of a bundle of relationships; not that things are the first reality and that our knowledge of relations is derived from them!

¹ For fuller treatment of this point, see my book, "Intelligence and Mental Growth"; also my "Chemistry of Thought."

THE INNUMERABLE INSTINCTS OF MAN

But either view forces us to realise that relationships are apprehended.

Now the causal relationship is one which "mediates"¹ not between things, but between events, events which follow one another in time. And for this reason some dispute has arisen as to whether causation itself is really apprehended, or whether it is only the "sequence of events" which is apprehended. In this discussion, however, it has been entirely overlooked that much depends on what kind, or class, of causation is in question. There are many types in which only sequence is (or can be) apprehended. The connection between the event and its cause is so complex, and often so hidden, that nothing more is possible.

A stranger to civilisation loitering in Fleet Street might come in time to suspect that the rolls of paper going nightly into a newspaper office were vitally connected with the newspapers poured forth next morning.

But only an engineer working on the premises could so witness every step in the process that he would know with the certainty of first-hand experience how this second event depends on the first.

The same is true of savages who learn "by experience only" to associate birth with copulation. Their knowledge rests on the apprehension of sequence alone. It differs radically from the knowledge of the modern gynaecologist.

On the other hand, there are many instances of effects following causes which are not only much simpler than this, but in which the various parts are,

¹ To use Spearman's term.

ARE THERE DIFFERENT KINDS OF INTELLIGENCE?

as it were, all "open" and directly accessible to our senses. What happens then?

Here is a hammer, here a nail. I know that things often move when I press on them. I can feel the weight of this hammer. It exerts a pressure like my own. I often hit things with my hand, and I derive extra power from the movement. If I hit the nail myself it hurts me. But I do not feel what the hammer hits. Let the hammer, then, work for me! Without trying, I can see what would happen. I have made an invention, a discovery. Seizing the hammer, I strike the nail. My invention works!

Delightful though it may be to have a prediction confirmed, there was no guesswork about this. It was a simple "addition-sum" in previous knowledges—an adding of experiences. These pre-existing "units of knowledge" make the success of a hammer not just an unexplainable phenomenon, like digesting one's lunch, but they make it into a phenomenon of which we seem to have inside knowledge. This sequence of events has an inevitability, a "necessity" for our minds, far beyond the certainty which came slowly to the observer in Fleet Street.

In fact, it need not come slowly. Even an ape, without hesitation, uses a stone to crack a nut. His apprehension of this particular type of causal relation is therefore immediate. Several others are equally immediate for him. He uses a swing; he can climb on a box to reach some fruit.¹ But many more than this are equally immediate for us. We can tie a knot, but the ape is baffled by the simplest knot. For every

¹ Kohler: "Mentality of Apes."

THE INNUMERABLE INSTINCTS OF MAN

creature, therefore, the causal relationships of the universe must be divided into two classes: those which are obvious to him and those which are not obvious. Those obvious to one creature will not be obvious to another, and vice versa. Even individuals within the same species may vary in this kind of capacity. It must contribute largely to the differences between what are called "intelligent" and "dull" individuals. The capacity itself I have called elsewhere the capacity for "direct perception of causation"¹—an unwieldy term, and not necessarily the best, but one which turns out in practice to be more useful than the word "intuition," which scholastic philosophers employ to mean the same thing, but which is used to-day in so many other senses.

It appears that whenever a causal relation is appreciated in this direct way, it is because all its parts are "within the immediate experience" of the observer. But these parts can only be "within his immediate experience," provided they correspond in some intimate fashion to the way in which he is made. Many causal relations are quite outside our experience. Hence it follows that only a limited number can be "seen direct" by us. For example, when a magnet repels another magnet, or draws towards it a small piece of iron, when a compass needle persists in pointing always north and south, we feel completely baffled—because the forces concerned are quite foreign to our own. We see that these things do occur. We have no notion at all that they *must*. Chemical action is another field in which we have to rely solely

¹ Op. cit.

ARE THERE DIFFERENT KINDS OF INTELLIGENCE?

on habit. But the mere fact that some causal types exist in which we feel we have a part enables us to assimilate all others to these. We do know in ourselves what causality is; therefore we conclude that these other types are also examples of causation.

This way of looking at the matter (which I believe to be new) accounts for two facts: (1) the belief of some philosophers that causation is a delusion, and (2) the feeling of ordinary people that this kind of philosopher must be wrong. There is a really neat and precise line drawn between two types of causation: those we can perceive direct and those we can only believe in after lengthy experience. Philosophy, so far, does not seem to have separated these very well. Kant showed that he saw the difference when he spoke of apodictic causation and empirical causation. The first, he said, is a type of which "one cannot conceive the opposite," while the second "can only be discovered by experiment." But to be "unable to conceive the opposite" is the same thing as to "perceive the necessity direct", hence he did make precisely this distinction. But what he failed to realise was that the source of the distinction is not in the world of causation, but is entirely due to a limitation in man's own powers. A creature of more multiple experiences than man could "perceive direct" more types of causation than man. More types of what to us is "empirical causation" would be for him "apodictic"!

I have shown in my "Chemistry" of Thought how convenient this conception is. It explains the psychology of proof—for proof is only needed when

THE INNUMERABLE INSTINCTS OF MAN

we cannot "see" a truth "direct." It turns out that we always prove "by replacement," that is to say, we replace a truth which is beyond us by a set of statements each of which can be seen as true by "direct perception." I further showed that the logical syllogism itself is a "direct perception" of a similar kind. In fact, whenever we say, "It follows," we are making use of this power. We use it to detect the fallacy of an argument. No leading article could be written which did not contain a string of assertions based on it. It is a psychological function which *lies behind* philosophy, since it provides us with the very power to "philosophise" itself.

But the view has a different importance in the field we are now considering, for it shows that different types of creature must appreciate different types of causation. Here is a quotation from Grey Owl in his writings on the Beaver:

"Long before the movement of the tree can be detected by the eye, they appear to receive ample warning to stand clear, which I believe to be given by the action of the fibres in the core, and sensed by the teeth. Given a sufficient grade on which to gather speed, the beaver will race the falling tree to the water, even if it should be dropping directly into the runway. So accurate are their calculations that they are never caught, although they take no such chances when felling big timber, in which case they retire a few yards in the proper direction to ensure safety. Even a log that jumps the stump and ploughs deeply into the ground they easily avoid, and when a log falls which has been suspended horizontally—for in their cuttings timber lies criss-crossed at every imaginable angle—they can snap away from beneath with the quick dart of a striking rattle-

ARE THERE DIFFERENT KINDS OF INTELLIGENCE ?

snake. They work at a high nervous tension at such times, and attempts to safeguard them against possible accident only result in upsetting their calculations and imperilling their safety. Once, when I was standing too close to a female beaver and the tree was about to fall, she came over to me and tried to push me away from what subsequently turned out to be her prearranged line of retreat."

Suppose, again, that some animals are sensitive to natural forces outside the range of our senses. Magnetic force, electric force, gravitational force, all show that space is full of properties which we can only infer; we cannot experience them direct. But other creatures may be differently endowed; they may have a sensitiveness different from our own. This would put them in touch with different spheres of cause and effect; *give them a different quality of intelligence*. Birds can return home without reference to sight or sound, and all birds have this power to some extent, but it is greatly magnified in the homing pigeon. Birds also have a mysterious time-sense. Those which migrate have to choose most accurately the date of their departure, since a week too soon, or too late, might land them into bad weather and destroy them. These find their way so perfectly that, as many observers testify, the same couples commonly return to the same spots year after year.

A certain moth kept captive by Fabre seemed able to attract males from immense distances, under conditions which precluded entirely all influences of sight, sound, hearing or smell.

* But more often animal intelligence is not only less than man's, but is *included within* man's intelligence.

THE INNUMERABLE INSTINCTS OF MAN

The bird is pretty good at nest-building, but given the same wish and the same materials, a man could build the nest equally well. On the other hand, men can build other things besides nests. Yet the bird's ability is surely a proof that some modicum of "power to perceive cause and effect" is given to her, since to arrange the twigs suitably needs various understandings of "how" and "why." These are all "direct perceptions of causation."

If each instinctive creature can do something of the kind, it must also happen that between the different points in its diagram it uses different types of intelligence. It may even be endowed differently at the different periods; and this we see very clearly in human psychology, for the adolescent is surely in a state of special sympathy with natural forces, and has accordingly a type of understanding different from men at other ages. So, too, the lover may have an intelligence specially suited to the ends of courting. Not only does instinct drive him in the sense of setting him his goal, but a special intelligence may guide him to it, born of his mood. Even more striking is the new sensitiveness of the parent, in particular of the mother, in interpreting her child—for psychic events are also bound together by causal chains, and some can predict "consequences in the soul" to which others are blind.

CHAPTER IX

The True Instincts of Human Reproduction

WITH this "armoury" of notions in mind, let us now return to the general matter of human reproduction and of the instincts connected therewith. The first obvious fact is that in human reproduction we are dealing with a typical chain of instinctive acts—not with one instinctive act, as usually said. And this chain grows more complex the more one considers it.

"Falling in love" is followed by courting, courting by cohabitation, cohabitation by the bringing up of a family. The attitude of both parents changes when the first child is born. Previously they loved each other; now they love the child. His welfare has become a prior consideration. This change corresponds perfectly to the completion of one phase in a typical instinctive chain and the beginning of the next. A new goal has come into sight; desire has changed over towards that.

But even this is far from being "all about it." Let us begin with falling in love. Very much illumination has been cast on this by Freud. According to him, man's soul possesses a kind of "love-force." This, which he calls *libido*,¹ plays a great part in psycho-analytic treatment, and it has therefore become a familiar acquaintance of the practitioner, whose descriptions of it are highly arresting. The *libido* is said to "attach itself" to an object; for example, that of a lover attaches itself to his mate, and this makes his psychic and emotional relationship to her very different from that which he has to any other being.

¹ Pronounced "lib-éé-do."

THE INNUMERABLE INSTINCTS OF MAN

From this is born that special feeling of reverence which he has for her alone; from it comes his tendency to idolise and adore, to enhance her perfections and minimise her imperfections, to place her on a pedestal shared by none. *Libido* works a transformation, throws a bright veil over the "love-object."

This idea was no doubt implied by common speech long before Freud spoke of *libido* as a definite psychic force. "The object of his affections" was an expression often used by novelists. People spoke of forming "an attachment." But Freud's *libido* is by no means born at the moment when the attachment is formed. He considers that it always existed and was merely transferred. What, we may ask, was it doing previously, supposing a person has fallen in love for the first time? Always, says Freud, it was attached to someone: perhaps to the mother in the case of a youth, or to the father in the case of a girl, possibly, even, to the person himself. This last condition, being in love with one's self, is known as ~~narcissism~~.

A person who is being "psycho-analysed" shows clearly by his dreams, and by the current of his thoughts, to what love-object his *libido* is attached. A "transference" of it to some other love-object may even occur during treatment. This is a moment of profound psychological significance. Suppose the *libido* of a young man has remained attached to his mother long after the period of life when this was normal, and that this be the root cause of certain psychic disabilities from which he is now suffering; for example, he may find himself unable to fall in love and mate normally, or he may be already

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

married, but feels no affection towards his wife. Treatment reveals the situation, and a "transference" of *libido* must then be brought about. This has a way of occurring first to the analyst himself (a period which can be embarrassing), and from there it must pass to the fitting mate.

Thus, a person's *libido* appears to be a constant force, which has always to be reckoned with. Freudian technique shows it to be present from the earliest years of life. Normally, it is attached first to the mother or nurse, but later it may transfer to the father—especially in the case of girls; but boys remain attached to the mother, unless—as sometimes happens—they go through a "hero-worshipping" phase, in which it has been temporarily transferred to the father, or to the "father-type." In the same way, schoolgirls fall temporarily in love with an older mistress.

On the other hand, romances do occur between child and child, and not necessarily between boy and girl, but sometimes between boy and boy, or girl and girl. Dr. Crichton Miller regards it as normal for the very small child to fall in love with someone of the opposite sex, but says a period exists during the school years in which it is normal for love to be homosexual. Later still, during adolescence, there should come a transference back to the opposite sex, and this will be a prelude to normal mating. He regards permanent homosexuality as due to a "fixation" which has occurred during the school period. In other words, the psyche has ceased to march forward as the child grew: it "looked back"—like Lot's wife — becoming thereby fixed, immovable,

THE INNUMERABLE INSTINCTS OF MAN

changed to "a pillar of salt." Peter Pan, the boy who wouldn't grow up, is an expression, says Crichton Miller, of an unconscious wish to do this. No doubt there are various ways in which a person can "fix himself in the past," and psychologists recognise this to be a danger at any age.

But whether the homosexual stage be truly normal or merely common at the present day (owing, perhaps, to segregation of the sexes in school), there is overwhelming evidence that the *libido* is a reality and is a force constantly present. We might compare it to the attractive power of a magnet. Yet the magnet's power attaches itself indifferently to any and every piece of iron nearby, while *libido* is a selective force. It chooses, and having chosen, it remains fastened to one object only. If a magnet were to choose one piece of iron and reject all others, then *libido* could be likened to the force of a magnet.

But *libido* is unlike any of the other natural forces. Its selectivity, or singleness, makes it stand out as something quite unique among the various types of force which are known. A conclusion of social interest is that its undisturbed operation must obviously lead to mating in the singular, and, in fact, neither history nor literature ever shows a picture of passionate love fixed on more than one person at a time. Even in the *harem* there is a favourite, and Don Juans are no exception, since psychologists are never tired of showing that the promiscuous type of man is really seeking his ideal mate. His very fidelity makes him inconstant. To be in love with one person is normal, to be in love with more than one is impossible.

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

sible: a fact of which jealousy shows profound recognition, for the jealous person reacts to the knowledge that love is indivisible.

Now, it may seem that the *libido* theory has no relationship with the facts of instinct so far given. But is this really so? I have lately begun to wonder whether all instinct does not really conform to the *libido* pattern. Instinctive actions are so commonly selective. Even those of the developmental type are selective. Children can "become attached" to objects of a purely material kind, objects which they need for their growth. I have seen the Montessori "broad stair" actually kindle deep emotion in children of just the right age for it (and this limitation to a particular developmental period seems to rule out any pathological interpretation, such as "fetish-worship"). A lively happiness shines in the little child's face as he takes the wooden pieces to some chosen part of the room. Next day he seems to look forward to seeing these blocks again. He runs to them directly he reaches school, clasps them eagerly in his arms, his little face beaming with smiles. It matters nothing where he takes them, so long as they are his for the time being and no one interferes. His movements are not ritualistic, nor can they be "obsessional," for the phase passes off in a few weeks and is extraordinarily universal. As with learning to read, write, or speak, it seems like a door through which every child must pass at some stage. The whole occurrence gives more the impression of an inner force fixing itself to a suitable object. The two combined produce motive, the normal dictator of any deliberate act.

THE INNUMERABLE INSTINCTS OF MAN

Can nothing like this be seen among animals? Does not the hunting wasp "become attached" to that particular site she has chosen on which to build her mud-cell? May not her need for this, too, be a kind of *libido*, which acts like a wavy, seeking arm, suddenly finding what it needs? Fixing itself to the spot chosen, it creates a motive from which spring a series of highly detailed and co-ordinated actions. These actions would have been different had the *libido* fastened on some different site.

What could all this resemble more closely than the human search for a mate, the attachment thereto when found, and the consequent chain of actions which would have been different had the choice been different?

But if the choice of a definite object on which to fasten is shown by other instinctive forces than those of love, have we not nevertheless something different in man's *libido*, since the latter pre-exists for many years before the mating period? If the chief duty of libido be to choose a mate, what useful function (if any) is the libido serving in the years before this? What can it do in the early years but cause trouble? Here there is little one can do but speculate.

Nature is renowned for her economy of means: she may in these early years be using the same force for another purpose. Perhaps this purpose is less plain than in the case of mating, yet the child's attachment to some grown-up person is well known to be an absolute necessity of his being. Being defenceless, is it not desirable that he should "love, honour and obey" the ones who defend him?

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

Freud, it is true, sees in the child's love for his mother or nurse a formative influence for his later love—he even thinks it may determine the type of mate he will choose. But so many neurotics have suffered an arrest of development dating from this age, that one would like to know how far the evidence justifies extending this to all cases. It may be that fixation of this kind only occurs when the friendship has been *violently broken*. Normal adolescence should mark a liberation from the chains of childhood, and while it is open to argument that even fewer children enjoy a normal adolescence than a normal infancy, nevertheless one does see in schools a good deal of apparently wandering *libido*, the formation of romantic friendships with elders or equals, and all going on in quite a fluctuating, though not necessarily haphazard, way.

But even if later love sometimes follows the pattern of one of these earlier ones, does it follow it was dictated by it? Is not the contrary also a possibility? The more one knows of education the more one becomes aware of a connection between the child's present and his hidden future. This future is somehow dictating his present, and not vice versa.

That, furthermore, is typical of instinct; for instinct can often be expressed in these terms: "The future is dictating the present." The future of the Capricorn grub, burrowing in the heart of the tree, is what dictates to it the place for making its chamber for metamorphosis. Boy and girl friendships may very well be indicators of the type suitable for later mating. For this reason the pair find one another attractive.

THE INNUMERABLE INSTINCTS OF MAN

This makes the present choice not the cause of the later one, but its precursor. Often enough the same pair meet again, and marry, later in life; and the most idyllically married couples sometimes confess to a boy and girl courtship. But still another possibility is that early friendships are experimental and preparatory, for successful mating demands practice: it needs practice even to make and keep a friendship. May not nature be seeing to this, just as the bird before nest-building indulges in a kind of symbolic nest-building, or play, in which only parts of the action are carried out? The capacity for psychic union may well construct itself by parts, as many movements do, and many intellectual formations.

Finally, there is a factor in the choice of mate, whether early or late in life, which surely deserves more consideration than it has ever been given by psychologists. That factor is beauty. My first studies of this were made abroad, and I was later astonished to find how completely the biological importance of beauty had been overlooked by the English school of anthropology and eugenics. Very different is the Italian school, where Viola (following Quetelet) showed that beauty is not a superficial or unimportant character of living things, but one closely related with a general fitness for mating and for success in the battle of life. He showed that the Greek statues of Praxiteles, generally reputed to be the most beautiful in the world, had "medial" measurements; by which is meant that, while every measurement such as foot-length, arm-length, chest-circumference, etc., shows variations from individual to individual,

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

the average, or medial measurement, can be calculated for each. Beautiful people have a greater number of these medial measurements than ugly people.

This does not need very much statistical proof. Directly you think it over, you will see that it must be so. What comes into your mind when you think of an ugly person? Is it not some exaggerated feature? Too prominent a chin, too short a nose, too sloping a forehead, or a forehead high and projecting like a parrot's? One can usually analyse ugliness. One says the eyes are too close together, too small, the mouth is too large, etc. What do all these judgements mean? They mean you are recognising departures, wide divergences, from custom. But what is this custom? It must be the majority of cases—the thing you see most often.

You may say that exceptional beauty is rare, more rare than moderate ugliness; how, then, can the customary measurements be the beautiful ones? The answer to this is that to possess a single average measurement—for example, height—is not enough to make a person beautiful. Beauty is made from a great number of these medial measurements all united in the same person. Most of us possess a number of them. But to have mingled with these a few departures from the mean is enough to make us plain.

That is why there are more plain people than there are ravishing beauties, more plain people than desperately ugly ones. It is hard for the growing cells to make a person perfectly beautiful: there are so

THE INNUMERABLE INSTINCTS OF MAN

many ways in which deviation can creep in; there are so many targets for nature to aim at. To hit a great number of targets all in the bull's-eye is like making a large break at billiards. The beautiful person is a breaker of records.

The Greek artists undoubtedly made no such elaborate measurements as are needed to calculate an average; their own sense of beauty led to the choice of these dimensions. But this must mean that what is called the "sense of beauty" is in tune with them. Science, by its careful measurements, has shown up this curious fact; but we still have to ask why nature should be at such pains to give men pleasurable emotions every time they see an *ensemble* of medial measurements? ✓

To answer this question, the Italian theory is taken one step further. Certain bodily measurements are clearly associated with the size of the vital organs. Should there not be a harmony between these and the limbs? A man with too small a chest for his height will surely have too little lung-power for his needs; if his bust be too large for his legs, he will prefer sitting to standing; have a tendency to corpulence. This man's large heart will cause joviality and ready anger. He is a recognisable type, contrasting with the long, willowy type, which is usually weak. But a medial type exists which is more active than either of the above, less subject to certain diseases, more "fitted to survive."¹

¹ For an excellent account, see "Pedagogical Anthropology," Montessori. A convenient short treatise recently issued is, "Types of Mind and Body" (Psyche Miniature Series)

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

Something of this kind certainly occurs among animals. Measurements were once taken of the wing-span of a flock of birds, many of which were killed in a storm. All those killed had a wing-span either greater or less than the average. The medial birds were those which escaped. In a research on the fertility of rats it was observed that every record-breaking rat, the mother of an absolutely out-size family, had the medial weight. Furthermore, the "runners-up" all approximated to this mean more closely than the losers.

But in any species not only are the average types the lucky ones, but there are more of them (whatever the feature we choose to consider). Monstrosities are always more rare than normals. We seldom meet a human dwarf or a human giant, though they do exist. We are always meeting people of average height.

The various races of men show deviations from the central human form, and these deviations carry inevitable consequences in which the whole race shares. The Chinese have long, heavy bodies and relatively short legs. As Montessori has pointed out, their civilisation is stable but unprogressive.¹ The Australian aborigines had small chests and long legs. They died out before the invading European—who is of medial type. Conquering races are always of more efficient physique than those they conquer. The decline of empires has always been associated with blood-admixture, usually between conquerors and conquered.

These views have been ignored in circles where the

¹ Op. cit.

THE INNUMERABLE INSTINCTS OF MAN

Darwinian belief has been exaggerated into a message of social salvation. If man is going up and up, as the Darwinian view supposed, then variations from type are more important than the central norm. The man who believes this has in himself an unconscious resistance to the view that nature really aims at preserving the central type; that she dislikes departures from it. But suppose evolution did not take place in the Darwinian manner, but in some other manner, then it may well be that the norm of a race is very important.

The whole business of evolution is so obscure that, for all we know, human evolution may have ceased, anyhow temporarily. The whole of evolution may have gone in jerks instead of gradually, as suggested by the Dutch biologist De Vries, who was the first to "catch it at work," so to speak, and who actually produced "mutations" in his laboratory. The Darwinian view has never been tested by laboratory experiment; it remains a theory, and whenever "artificial selection" has slowly evolved a new type, it harks back, or "reverts," directly it is free to do so. Facts to-day are steadily fighting against the gradual view, whether one likes it or not. It is better to keep an open mind.

This permits one more readily to accept the beauty-theory of the Italians. At the very centre of the racial type will be the beauties of that race. Deviations from these will cause ugliness, and if nature aims at preserving the mean, an obvious way is to make these departures repulsive to those about to marry. An obvious gain is to make beauty attrac-

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

tive. "Born beautiful is born married." That is an Italian popular saying, and if this theory be correct it must express nature's own wish. No Eugenic Society could therefore arrange things better than by mating beauty with beauty, and if beautiful people have the best physical constitution, the most activity, and the greatest disease-resistance, they must also come to have the largest families, handing on in turn these qualities to the most children.

In any case, the preference for beauty is not intelligent, for I think we should still choose it in mating, whether convinced of its utility or not! Hence the demonstration in it of purpose makes it necessary to regard this as an instinct too; for the instinctive act is always an unintelligent act, which has a biological purpose.

Yet no psychologist of to-day puts on his list a "beauty-choosing" instinct. The vague phrase, "sex-instinct," or "reproductive" instinct, is made to mask all this exquisite detail by which behaviour is really guided. Really, it would be hard to find a more perfect example of instinct in action. Just think to what marriages reason alone would lead! In fact, the most monstrous marriages do appear directly instinct is trampled underfoot by worldly considerations, by motives of financial gain, parental pride, the need for an heir, or what not.

In those civilisations where it is the custom for parents to arrange marriages quite regardless of the children's wishes, love is inclined to be a social nuisance. It springs up undesired in the wrong places, and gets treated like those flowers in a garden which

THE INNUMERABLE INSTINCTS OF MAN

we have decided to call weeds. Often enough it causes a head to be lopped off. But in countries like our own, where love has won for itself a universal respect, there is a general tendency to have regard for it and to base marriages upon it. This I should call an "intelligent defence" of the instinct, a defence against inroads by other departments of intelligence!

There is every reason to reflect on this curious fact that man can trample on his own instincts, and does so often. His intelligence is a bit too strong. Often it needs keeping in check. Instinct has to be protected from it. Man, in fact, is free from the absolute tyranny of instinct known to the animals. This means that intelligence can even make him step over the verge of his ultimate interests, and when this happens only a bit more intelligence can bring him back again. This is the real meaning of free-will. It is a psychological doctrine. It asserts the dominance of reason in man, as compared with the dominance of instinct in the lower creatures. It does not assert that reason itself is uncaused, or that actions can arbitrarily escape from reason—the last thing any of us would wish. If free-will means jumping under a bus from which you have just decided to escape, who wishes to be free? The only kind of free-will anybody wants we all have—unless something goes wrong, in which case we become "irresponsible" and are put under restraint.

Happiness comes from release of instinct; for example, children are happy when allowed to do their natural work; so is the hungry man who can choose his meal; or the man of special gifts who

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

chooses his own profession. The lover is happy when free to select his mate. Emotional depression comes from forcible interference with these things. I say forcible, because, when a person renounces any of them for reasons of his own—for reasons which he himself selects and appreciates—then the psychological situation within him is very different; it may bring about the compensating happiness of heroism. I shall discuss this more fully in my forthcoming book on the Will.¹

I do not, of course, assert that beauty is our only guide in choosing a mate. Other factors, cultural, intellectual, calculated or unconscious, and even other physical factors, evidently come in. Indeed, one of our ultra-modern psychologists has recently asserted that smell is as safe a guide as any!

The factors which ultimately control the birthrate being still one of the deeper mysteries of science, one might also ask whether all individuals are equally endowed with the mating disposition? May there not be a certain proportion of "born bachelors" or "born spinsters"?

At the big "swannery" in Dorset, where swans are not kept in captivity, but merely protected, the keepers have noted that not all male swans have the mating instinct. Some seem to have bachelor instincts and never mate throughout the whole of their lives. The swan is a monogamous bird, and those which do mate remain coupled for life, raising brood after brood of cygnets.

This agrees with the only kindred observation known to me in human affairs, and that is a discovery

¹ In preparation.

THE INNUMERABLE INSTINCTS OF MAN

made by the Eugenic Laboratory, London, where it has been shown statistically that three-quarters of every human generation is begotten by half the preceding generation. The other half begets the remaining quarter! Clearly, this gives rise to the suspicion that marriage is a vocation not distributed to all equally. If those who have this mission merely replace themselves, the race will diminish. They have to replace not only themselves but all those others of their generation who are not destined to have children. They have to replace those of their own children who will not marry and those who will die before they marry.

✓ Before going on, let us cast round a moment to see if any other instinctive factors can be seen obviously at work in the pre-mating period. Tradition holds that modesty is instinctive, and certainly there is a sensitive shyness and secretiveness in adolescence which may well have an important part to play in the delicacy of selection. Approach, says nature, must be very gradual. Homer Lane became aware of this in his celebrated co-educational experiment, "The Little Commonwealth," where a degree of freedom was permitted to the children which would certainly render this observation "reliable." An educated savage by the name of "Lobagola" recently published his autobiography, wherein he refers to the same fact as commonly accepted among the natives of Northern Africa.¹ But in small children, as Freud points out, such modesty as we see is more often acquired than natural. So here is a disposition which changes with age-period, and that is always a sign of instinct.

¹ "An African Savage's Own Story "

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

Similar changes occur during growth in regard to ostentation and display. There is an age of youth which everyone associates with bright ties and coloured socks. But this is a symptom very much suppressed in to-day's social life. In socks and ties we see only the subdued shoots of that fullness of display which nature really intended—shoots feebly creeping past the paving stones of social disapproval. This disapproval is something totally unnatural to man and peculiar to this unnatural age, in which decoration of every sort—except the adornment of woman—has vanished like the tints of London trees scourged by the petrol fumes. While psychologists are busy discussing what the æsthetic sense is, it would be more satisfying at the moment to know where it has gone to.

But all these instinctive aspects of the adolescent and courting period pale into insignificance before the tremendous changes which occur in both parents following the birth of the first child. Here is something comparable to what happens in the lower creatures when "the next instinctive point" heaves in view. Henceforward the aims of the couple are different. Care of the children takes first place. As the family increases, sex (so-called) sinks to a position of secondary or tertiary importance, and "parent-hood," with a host of fresh guides, different in the two sexes, becomes a kind of "psychological characteristic" of both parents.

Going on to-day is a piece of scientific research into the laws of human life which has immense possibilities. I speak of the "Pioneer Health Centre," at Peckham, which is a "family club" conducted by

THE INNUMERABLE INSTINCTS OF MAN

Dr. Scott Williamson and Dr. Innes Pearce. Among other things, it has enabled close observation to be made of this very point. For the members of this club are not individuals, but families. The whole family must join, mother, father, children; either the whole family joins, or it all stays away. The family is regarded as a single unit. Engaged couples may also join. The object being health, the families agree to present themselves for periodic medical examination and advice.

From this work very startling results have already been obtained. It obviously enables data to be collected of an entirely new kind in science. Not only can predispositions to illness be noted and warnings given; not only can the presence of actual disease be detected before it becomes manifest; but family observations can be made of the first importance to science. Here is a vast scientific laboratory for the study of human life: a laboratory of a type never before known, since most systematic observations, hospital and other, are made upon individuals, and then only when ill.

Here (so Dr. Williamson tells me) it has already become apparent that man and wife are biologically one and biologically different from themselves before marriage. Physical changes have actually been observed in the husband corresponding to the wife's pregnancy! Often has it been noted that marriage takes a man from his former friends, but the reason is no superficial one. "The man has actually become different," says Dr. Scott Williamson; "he is no longer the same person."

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

In his little book, "The Case for Action," written collaboratively with Dr. Innes Pearce, there is narrated how parenthood shows remarkable selective power for the little ones, not only as regards food, but also as regards psychic conditions. The way in which each family chooses its own friends, makes a circle adapted to its own type, is of deep biological importance. We can all see, once it is pointed out, how accurately and sensitively this is done, how certain types are held at a distance from certain family circles, while others are admitted; and how troublesome can be the admission of an uncongenial "set."

Families, and family circles, are very distinct, and vary as widely as people themselves. Friendship itself must be based on a power of selection, and the rude violence done to this by barrack-room life, or the forcible juxtaposition of unselected types in a hospital ward, is a proof of it. Evidently we choose our friends as carefully as what we shall eat, and there is no reason to suppose we are guided in this wholly by utilitarian motives.

Further selection occurs in the material parts of environment: what pictures shall we have? What shall be the colour of the curtains? In tenement dwellings much of this selection has been done already, and this perhaps accounts for a certain revulsion of feeling which these dwellings have begun to excite among the poor. I am told that the Black-shirt movement has found it unprofitable to offer "more and better" flats. East-enders call them "barracks," and would like to be quit of those they have.

THE INNUMERABLE INSTINCTS OF MAN

Another obvious fact, but one passed over in silence by the present-day psychology of instinct, is the undeniable "division of labour" characteristic of the normal home. The absence of boredom in a repeated task can be taken as a certain sign of instinctive factors at work. What father has the same aptitude as the mother for long hours of vigil while the children are playing, sleeping, or ill? Without venturing on vexed political questions as to woman's natural place, one does commonly find her in the home while father is out at work. Mother's instinct is said to prompt an understanding of the child's point of view which father's cannot. It is equally certain that the father feels content with his lot of bread-winner-in-chief. Another good guide is the sympathy people feel for the man who is forced by some unusual circumstance to "turn to, and do mother's work." Indeed, the spontaneous sympathy of onlookers can be a fairly good guide to the seeker after instinct, for it must result from some deep recognition of nature's laws. Any "offence to life" is somehow resented, or felt as unjust, by the disinterested observer. The Greek tragic drama, with its aim to "purge the soul by pity and terror," could hardly have succeeded unless, deep in the soul of the audience, were some such recognition. An audience of sadists would surely laugh!

Let us put down as instinctive, therefore, the division of labour in the family commonly seen to occur.

To what extent are relationships between parent and child guided by instinct? Instinct here has an immense part to play. It is true that parents, un-

THE TRUE INSTINCTS OF HUMAN REPRODUCTION

instructed, make colossal blunders in feeding, clothing, and education. Yet it must be instinctive on the mother's part to offer the breast; and, apart from there being an undoubted instinct to "care for" the child in the general sense of feeding, housing, clothing and protecting him, is there not also a special one, predominant possibly in the father, to "educate" him? By this I mean, to pass on whatever elements of culture the parents themselves value. The urge to do this is too universal, and too biologically purposeful, to be dismissed as wholly intelligent or as derived by intelligence from the instinct to "care for" the young. It is very much needed to give the human continuity of culture that we see about us; it explains the force of tradition, the transmission of folk-lore, which—of all things—can hardly be supposed to have "survival value" in the sense of helping the child to earn his living!

What of the child? Has he a correlative instinct to venerate his parents, listen to their teaching, and accept their leadership? According to some psychologists, too much so! He forms all too easily, they say, ready-made formulæ and principles of life, which become his "conscience." Whether this be excessive or not, here is testimony that it happens. Here, in fact, we see a biological purpose for the *libido* of childhood, discussed on another page. Nevertheless, there comes with adolescence an "age of emancipation," a change in this attitude, very much in keeping with all we know of instinct, when a new "point" heaves in view, after the last has completed its purpose.

In this "age of emancipation," provided parents

THE INNUMERABLE INSTINCTS OF MAN

respect it (for all instinct can be disastrously trampled under foot), everything can be tested afresh. All knowledge can be reviewed, and no conviction need of necessity be retained. In the biographies of great men one constantly finds references to this change of front, in matters of politics, religion, and even of taste. Some psychologists even proclaim that a man will believe of necessity the opposite to what his father taught him, and, whether this be universal, or merely occasional, it is still another testimony to the fact that a period of life does supervene for the natural revision of these things.

One final point. Growing birds have not only a "leaving-the-nest" instinct at a certain age, but the parents exhibit a "throwing-out-of-the-nest" instinct to correspond with this. Whether, as Crichton Miller avers, there is something similar in human parentage, its presence would certainly be desirable, since too many young people fight a losing battle to get away from home, so as to form their own lives and personalities. Parents, perhaps, mistrust their own instinct on this point, but where wise counsel has taught them its importance there are seldom any regrets. Children, re-invigorated and "become adult," return voluntarily to the home several years later; but the rôle has now been changed: they, with their new strength, have become protectors to the ageing parents. A head-mistress of forty was once invited to attend an educational conference in a foreign country. She replied, "I will ask mother." This is a tragedy of arrested development. The parent has clung to parenthood, keeping the child a child.

CHAPTER X

The Social Instincts of Man

IT will be noted that ample room is still left for social instincts, such as many psychologists already assume and name: for a so-called "herd instinct" (or tendency to behave like one's fellows), for loyalty to the group, defence of the group, for subservience to leadership, or for leadership itself (which most people manifest in some degree, even if the group they lead be a small one, for example, a business, a club, or a cricket team). There are some so wedded to the notion of democracy (interpreted to mean that "each man is as good as his neighbour—if not better") that they dislike very much the idea of leadership as a natural human instinct, with its correlative of loyalty to a leader. Yet these two non-intellectual phenomena are to be seen on all sides—indeed, they show more clearly in the less intellectual folk. In fact, it takes a good deal of intelligence to reason one's self out of loyalty: one has to "rationalise" against it, almost; and even then it still bobs up in the minor and unexpected pathways of life. In the most democratically elected committee there is always a hidden leader, and the wise look to see which way he is going. But politics and psychology are dogs to be kept on separate chains. Let us hurry on to less disturbing thoughts. One moment, though! Caterpillars show this capacity, and the more gregarious animals. So it cannot be outside the power of nature to produce both spontaneous leadership and a spontaneous willingness to follow. The law of it operates thus: the most capable individual present takes the lead in any

THE INNUMERABLE INSTINCTS OF MAN

given situation. One sees it, for example, in a street accident or a skating fatality. The others are more ready to take orders from this person than to think out solutions for themselves—they are even relieved to find him—given that the problem which needs solving is a collective one needing co-ordination of its various parts.

Most agree that there is another peculiar social instinct connected with the general preservation of human life. What is it that groans inwardly when someone else meets with a disaster—provided, of course, that the person be no enemy of ours? This same something makes us go to the rescue of perfect strangers, or to demand justice when it seems that a social group is menaced. It is a fact which cannot be denied. Every politician knows that the easiest note on which to harp is the public "sense of justice." "The exploitation of man by man" is an effective slogan simply because it conveys the idea of an inhuman, or hurtful, relationship. It conveys a sense of injustice. And while, of course, it is true that to-day many men are exploited—especially in large concerns, where the exploiter is out of sight—it does not necessarily follow that the spontaneous "leader-follower" relationship is an exploitation. Often it is mutually beneficial. It may almost be "symbiotic," to use the biologist's word for that extraordinary relationship between creatures of different species, which are sometimes seen helping one another. The loyalty which unites natural leaders and natural followers can well be helpful to the whole human race. Indeed, we are beginning here to see purpose in both these

THE SOCIAL INSTINCTS OF MAN

tendencies: the leader-follower tendency and the tendency to sympathise, for who can doubt that human sympathy is helpful to human life?

McDougall tries to extract this general sympathy for others in some indirect fashion from parental affection, but not only is it shown by persons who are not yet parents, but it differs very much from parental love, which is so exclusively limited to one's own children that many have described it as selfish. McDougall's idea is really born of the evolution-theory of human life, which assumes that man was not always gregarious, but that single individuals, or families, roamed the land before forming themselves into tribes. In other words, it comes from the belief that man started by being the natural enemy of man. But we must insist that what exists is what matters. Above all else must we keep our eyes open to see facts, not keep them closed in obedience to doubtful theories. Like all scientific hypotheses, the Darwinian belief must daily re-subject itself to the tests of observation. Here are some of the facts that test it. Directly a theory becomes a sieve for facts it becomes an obstacle.

Other speculations exist as to whether there is an instinct to go hunting. Some say that outdoor games, tennis, football, etc., are psychic substitutes for this. I showed in my first chapter that all games have a make-believe element, and in competitive games the thrill comes from a "pretence fight." We pretend that "it matters who wins," and this make-believe state of mind gives us the excitement of a combat without its dangers. Why are we so eager to enjoy this thrill—

THE INNUMERABLE INSTINCTS OF MAN

the thrill of a fight? Fighting of some kind may very well be part of a man's work. And always it is satisfying to act out fictitiously an instinct lacking outlet in reality. So competitive games at school may well be serving a developmental instinct of which the purpose is to educate the capacity for struggle. The thing commonly called "courage" is a definite inward pleasure derived from taking risks.

Apropos of war between peoples, I am tempted to ask a question which would seem most obvious. Yet it is never asked. Is there in man a land-owning or a property-owning instinct? Why, otherwise, does every man need his own front door and his own backyard? Even the slave on a large plantation goes home to his own "bit of earth." Ownership of land means that your permission is required for someone else to invade that land—and even the corner of an attic is "land" in this sense. Men are miserable without this modicum of ownership. They may be deprived of it under duress, or renounce it under vow (as in the religious orders); but normally each man acquires a plot of land, puts a fence round it, and exerts therein a right of absolute control (subject only to the law of murder or of committing a nuisance to his neighbours).

Birds do likewise. They stake out a territory which is "theirs," and no other bird (of the same species) may enter in. Swans divide up a river in this fashion. Gulls nest close to one another, but each has its own border-line, and fights off any intruder. Even the cuckoo lords it over other cuckoos in a large, self-selected territory.

THE SOCIAL INSTINCTS OF MAN

How much easier would it be to organise world peace had some infallible book made it clear to which piece of territory every man, or group of men, had an inalienable right! For just as individual men take unto themselves a territory, so do groups of men counting themselves as one; groups, shall we say, following a single leader, or a single code of law, which separates them from other groups similarly orientated. And who decides about this territory? War does, the might which is right, and so—despite recent hopes—seems likely to continue. Until this fundamental issue has been frankly faced, and unless some principle of distribution other than that of arms can be found and mutually agreed upon, it seems useless to discuss ultimate peace on earth. Having asked this question a number of times in public, and received no answer, I ask it once again in writing.

But I do not suppose that these somewhat groping surmises by any means exhaust the field of social instincts. My aim in hinting at a few is solely to be suggestive. Science may not dogmatise (even about Darwin). Let us therefore be grateful to have found a path a bit more solid than words. I ask others to try their feet upon it. Reality is never-ending, and to believe one has arrived is the most certain form of error.

CHAPTER XI

Instinct and Religion

I HAVE in the above chapter deliberately avoided any suggestion that there is, or is not, a religious instinct. Some psychologists assume it as a matter of course, others (in particular the Freudians) as hotly deny it.

Apart from the fact that children make up a religion if not taught one, just as they make a language for themselves if taught no language, I find it difficult to find convincing evidence on either side, since, to set up for one's self some kind of belief about the hidden side of things is so obviously within the competence of intelligence.

Is it instinctive to occupy one's intelligence in that way? Intelligence is for solving problems, and the unknown obviously presents a problem. All turns evidently on whether man needs to solve it. Does its solution aid his ends—even if one of those ends be to eliminate conflict, worry and fear?

One is obliged to answer, yes, to that question. Primitive religions, in particular, are always self-seeking. The participant, by his diligence, hopes to gain an advantage—he seeks aid in his designs, woe to his adversaries, foreknowledge of the future. Even in modern India, municipal government among the natives is largely carried on by a system in which rival deities are invoked. These may even “take possession” of a speaker, addressing the meeting through him, in a state of trance. The side able to command the support of the most powerful deities naturally wins the day. 1

It seems clear there have always been strong induce-

THE INNUMERABLE INSTINCTS OF MAN

ments to adopt, or to make up, some form of religious belief. But this is not in itself a religious instinct. It is rather a tendency derived by intelligence from other instinctive sources; for example, from the need for security, or to give force to moral standards.

As against this one must set an undoubted "feeling" for religious thought and ceremonial, which is marked in many children, and which is purely devotional. It is what the Churchman would call a spontaneous "love of God," and many claim that this is natural to man. Freudians of the inner circle explain it by an unconscious substitution for the "family situation"; they say that in the child's unconscious mind God represents father, the holy Ghost (or the Virgin Mary) mother, while Jesus Christ stands for the child himself.

But, even if this should prove well founded,¹ the prospective collapse of Christianity by no means follows, for the Christian philosopher has only to reply, "What of it?" The natural emotions of man could well attach themselves to the figures of his religious belief, without necessarily being the generators of those figures. The figures themselves could quite well come from historical, traditional or even rational sources—a thing quite apart from whether the reasoning is good or bad, or whether the beliefs in themselves are objectively true.

Freud would hardly say that the savage's fear of a demon had itself generated his idea of the demon, and it is no more rational to say that a child's love of God has generated his idea of God. Neither the real

¹ The evidence (so far as I know) being as yet unpublished.

INSTINCT AND RELIGION

existence of demons, nor the real existence of God, are touched by these arguments—apart from the fact that many people (including children) indubitably love their parents as well as God.

Is there any tendency to adopt one form of religious belief rather than another? In so far as evidence on this point can be said to exist, it is of a type tending to differentiate between the races of men. Some races seem to have a leaning, or an inclination, towards certain forms of philosophy. Though the very existence is disputed of psychic differences due to race, I cannot myself see any difficulty in accepting them as real; more especially as the racial differences of animals show themselves as much in psychic make-up as in physical. What accounts for the immense difference between the *psyche* of a wild cat and the *psyche* of a domestic cat? It is a racial difference. No one will maintain that the different breeds of dog are all alike mentally; in fact these mental differences fit them for different kinds of work. The sheep-dog is not interchangeable with the pointer, or the St. Bernard with the blood-hound.

On the other hand, race-prejudice to-day is so rife that one hesitates to accept any authoritative verdict on this point, even from the learned. For that reason, I select for special mention a book recently published, which is quite free from any suspicion of racial bias, since its author speaks entirely of his own countrymen. This is called, "Wars of Ideas in Spain," and in it, Prof. José Castillejo, a well-known Spanish professor, describes no less than four sharply defined and highly contrasting

THE INNUMERABLE INSTINCTS OF MAN

psychic types, which constitute between them the Spanish people.

There is no particular reason why he should draw distinctions which do not exist between the mentalities of his own countrymen, and if the men of these local areas differ so markedly in mental disposition, how can it be that men of the great world-races do not differ still more?

Professors who state that the mental differences between human races are either hard to define or non-existent, nearly always turn out to be themselves Jewish, and—although I wish nothing but good to men of all religion and every race—I must confess to having been converted recently to a view held by Hilaire Belloc, that the first condition for a *just* solution of the Jewish problem is a firm determination on the part of all concerned to drop the pretence that there is no Jewish problem.¹

But even if we admit the presence of racial mental differences between men, this provides no argument for or against a general religious instinct. All it says is that racial differences may affect a man's choice of creed. Some races may find a particular religion harder to adopt than others. The irregular spread of Christianity certainly testifies to this.

But if one can say little more at this stage about the relationship between instinct and religion, is there no more to be said about the relationship between instinct and morals? Many modern writers claim to be the possessors of perfect moral conduct and yet to have no religion; so presumably there is a difference

¹ See "The Jews," by Hilaire Belloc

INSTINCT AND RELIGION

between these two things, namely religion and the moral code.

McDougall, in his "Introduction to Social Psychology," tries to show how a psychological connection can exist between morality and instinct, without bringing in any question of philosophical or religious belief. For this he calls in aid a conception introduced by himself: that of "the self-regarding sentiment." A "sentiment," in his view, is a complex psychic structure which gets set-up inside everyone as they go through life. It is composed partly of clusters of ideas, partly of emotions engendered by the interplay of instincts. However, this particular sentiment—the "self-regarding sentiment"—does not appear to operate in any way differently from that complex psychic structure which used to be called, Pride.

And it is true that a careful reading of the ethical writings of Pagan philosophers shows that pride served them very often as a moral mainstay. "No man of dignity would do that," they said. This is obviously just an appeal to pride as the basis of morals.

But the saints and mystics of Christianity have always made a dead-set at killing off pride in their hearts. And yet they remained moral. Monks of the later Middle Ages even invented certain "pride-reducing" games, such as cricket; with the result that even a lord of the manor came to know what it felt like to be clean-bowled by his gardener, and to walk smilingly back to the pavilion having made a "0". No Eastern potentate ever runs a risk like this!

McDougall, of course, does not claim that his

THE INNUMERABLE INSTINCTS OF MAN

“self-regarding sentiment” can account for the many varying moral codes that men try to keep. All he says on this score is that moral laws vary in different parts of the world, and can therefore only be satisfactorily defined as the “accepted custom” in those parts. But while this may be true in a verbal sense, there can be no escape from making a deeper analysis in the field of individual psychology. To see this, it will be enough to consider a few typical, and contrasting, modes of belief, for each obviously leads to a totally different psychological situation.

There is the man, for example, who, after taking deep thought, decides (rightly or wrongly¹) that the universe must have a maker, and that this maker may conceivably wish his handiwork to be unspoilt. He further decides that he ought to feel a debt of gratitude for his own existence, and this prompts a ready obedience to any supposed wishes of this maker—an obedience reinforced by fears for his own safety in the event of his contravening those wishes. Given these beliefs, it becomes obligatory on this man not to commit murder or to steal, even as a means of eating and bringing up his family—ends that he will regard as worthy enough in themselves.

But another man concludes that creation occurred by chance, and that progress results whenever the strong oppress the weak. This man must naturally permit to himself methods of gaining a livelihood different from those enjoined on the man above.

¹ I insert this parenthesis in order to avoid all argument with the literal-minded. For we are not here discussing ultimate truth, but merely the influence which a belief, sincerely held, must have on a man's life.

INSTINCT AND RELIGION

Yet another is fully convinced that a deity exists, but he considers that this deity gave special rights to the particular group of men to which he belongs—so much so that any member of this group can pillage those outside it, not only with impunity but with honour. This view again will lead to different forms of effort in getting one's bread-and-butter.

But still another situation arises when a man holding any of these views finds himself living in a group which holds different ones. For he is then obliged to conform his conduct to their code. This man merely adopts his moral posture "under pressure of society." And it is a circumstance too tempting not to mention that many of to-day's psychologists find themselves precisely in this situation! It is perhaps scarcely surprising when some of these maintain that morals are always forced on the individual by society—which they spell with a capital S.

But it is not true—it cannot be true—that society alone lays down the law to individuals. The social law of to-day was made by individuals of yesterday. Even that modern commandment, which to-day one sees posted up more often than any other, "Thou shalt not spit," owes its origin to the work of Pasteur—a man who fought against society, and was certainly not dominated by it.

Moral ideas, in other words, always have their starting-point in conviction, or in philosophy; they come from reasoning—good or bad. Even tradition—the great keeper of morals—is no exception. Traditional codes always began with some kind of thinking, even though the course of this thinking became for-

THE INNUMERABLE INSTINCTS OF MAN

gotten before the code. The apparently absurd *tabus* of savages are not necessarily irrational, given the beliefs of those who made them: beliefs in magic, or in evil spirits.

Divine revelation itself, as claimed by various religious bodies, has always—at some stage or other—been judged by a thinking individual, when it was either accepted or rejected by him, on what he thought to be good evidential grounds. These processes are still going on, and the sifting and arguing as to religious belief belongs self-evidently to reason, although unconscious wishing (as Freudians maintain) can always be a danger to it.

By reason I mean here the ordinary reasoning of normal people, such as occurs in chemistry, geometry, politics, and so on. To say, as some do, that because neurotics reason falsely therefore all reasoning is neurotic which differs from one's own, seems strangely unhelpful, since it merely invites retaliation in kind. Such reasoning always goes like this: "So and so is not true. I know it isn't; therefore this other mind which believes it to be true must be a victim of unconscious motivation." But the thinker who thinks like this should always test himself by saying, "Supposing after all that this belief which I denounce is true, how can I be sure that I am not myself motivated when I fail to believe in it?"

It will become apparent that no absolute test exists, and the realities of the situation remain as they were.

Even if a person's mind could be entirely freed from unconscious motivation, there would still be an

INSTINCT AND RELIGION

intellectual battle. You cannot decide for or against the Einstein theory merely by being psycho-analysed.

The universe is full of mystery, and science still leaves plenty of room for quite healthy speculation in it. But this is not to say that reasoning is not often bad as well as good, or that conclusions are never ill-founded as well as well-founded. It does not deny that the selfish desires of men (conscious or unconscious) may influence the course of reasoning, or the unfolding of tradition, for the worse. The only point here made is that moral ideas are derived in manners such as these, and are not derived direct from instinct. They must be referred primarily to reason. Nor do they depend for their force and sanction solely on the pressure of society.

How these moral codes really do attain sufficient force to affect practical human conduct is probably a long (and a different) story in the life of every individual, but the first thing to recollect in trying to explain it is that no human instinct is strong enough by itself to withstand the assaults of reason. A man can starve himself to death in gaol, become a celibate monk, prefer torture to betraying his folk, or go down with his ship. We call it heroism, but it can be done. This is one of the peculiar characteristics of human psychology. The instinct concerned is simply trampled under foot. This explains how a man can refrain from stealing, when stealing is his one hope of a meal. It explains still more easily how men can rule out from their lives all temptation to steal, by following productive paths in earning their living.

But even for this modicum of honesty to become a

THE INNUMERABLE INSTINCTS OF MAN

habit, it is clear that some "principle" must be set up in the individual mind; a principle which differentiates between earning a living by productive means and appropriating (even with much labour and ingenuity) the product of someone else's work. The point of utmost importance for educational psychology is to determine not merely whether such a principle is justified, but *what gives it sufficient force to make it influence conduct*. One can obviously hold many principles in an arid kind of way without necessarily acting on them in times of stress. As a man naïvely said after a recent famous shipwreck, "My wife and I were going upstairs wearing our lifebelts when a sailor dashed towards us shouting, 'I want one of those belts'; so that was how I lost my wife!" Those who base all morals on social pressure are apt to overlook the fact that social pressure so often looks the wrong way just when most needed.

Most people agree that, to be effective, moral principles should be inculcated when the child is young. It is a common saying among missionaries that only the third generation of a converted family becomes really reliable.

Is there any period of the child's life when this kind of teaching can best be given; are there any instincts which help, not necessarily by setting up particular principles, but perhaps by making the child receptive to moral precepts generally? Just as the child busies himself to set up skilled movements of the kind he sees about him, just as he acquires language—and does these two things with such enthusiasm that we think he must be driven towards them by instinct—

INSTINCT AND RELIGION

can it be said that the child shows a similar preoccupation with moral problems? Does he take any delight in "practising" moral conduct once he has accepted and understood it?

Most of those in contact with the young would answer, yes, to these questions. But the capacity seems to vary hugely from individual to individual. Some children are always interested in moral problems. Is it right to do this, wrong to do that? Others less so. I was myself present at an incident described by Dr. Montessori in one of her books.¹ A little boy used to keep drawing the teacher's attention to other children's conduct—so much so that she thought he was a tale-bearer, or trying to get them into trouble. But she found out that it was a moral preoccupation. These were examples for him, and he wanted to find out, by their aid, what was right and what was wrong.

It is quite possible that human personality varies more in the complex sphere of moral sensitiveness than it does in most others; and it is true that accidental influences may play a large part in a case like the above; but it seems very unlikely that nature would leave so important a matter wholly to chance; and the continuity of moral codes from generation to generation—till even the origins of the code are lost in antiquity—seems to point to the child as the carrier, just as the child is the carrier of folk-lore, or of language.

This would agree with what psycho-analysis finds to be the true origin of "conscience." They say it

¹ "The Advanced Montessori Method" (Vol. I)

THE INNUMERABLE INSTINCTS OF MAN

“pangs” are due almost exclusively to prohibitions given to the little child by his father. These remain effective in the “unconscious” long after the child has forgotten them. But, whereas the psycho-analyst seems to think both father and child are somehow to blame for this, may we not see in this sensitiveness of the child for his father’s commands some special force implanted by nature, and implanted for a purpose? I think Mr. A. S. Neill is the only prominent educational writer who has gone so far as to announce squarely that to give a child a conscience is a criminal act, and to him (being a friend) I can venture the reply that I would like to see him in a hospital where there is a doctor without a conscience, a nurse without a conscience, and a cook without a conscience—a traveller’s misadventure that taught me much.

It has already been said that children in the adolescent period have a kind of “special psychological opportunity”—if things go normally—to revise their earlier ideas, and either to strengthen or change them. Here again, then, we see a period of sensitiveness; a passing disposition to study and to reflect on these things. Just as the muscles grow strong by repeated effort, so does the moral personality strengthen itself by exercise, and this exercise can be undertaken consciously. Its practice during this portion of life is well known to be a source of happiness (witness the Scout Movement). So here also are clear indications of an instinctive drive.

But talking of happiness, which is always a sign of instinct-fulfilment—and to complete the picture of human happiness—one is driven to make some dis-

INSTINCT AND RELIGION

tinction between those “absolute” moral laws which are bound-up with human thriving on this earth and others of an arbitrary, and therefore variable, nature. Every gardener knows that there are laws of plant-life and that if he obeys them, his plants will flourish; if he disobeys them, his plants wither or perish. These are Nature’s laws. He cannot change them. Is it not obvious that for man’s life, too, there must be a system of laws equally unchangeable?

Philosophers of the Christian era called this body of laws the “Natural Law,” and one of the most striking features of the Christian Church has always been its eagerness to know, and to respect, this body of laws. This might be called the human side of that Church’s teaching, as distinct from the mystical side.

In arguments about religion this peculiar character of Christianity (which it shares with no other belief) is commonly forgotten. Instead, a great fuss is made about its ritual. But if we compare this ritual with the ritual of other religions, with ritual prostitution, ritual murder, ritual suicide, the ritual killing of animals, the burning of widows, with ritual circumcision or other mutilations—or even with the ritual washing of the penis before entering a mosque—one begins to see in the Church’s ritual something almost negligible and certainly harmless.

One can understand the savage’s sigh of relief when the common sense of the Christian missionary frees him from the burden of his endless *tabus*.

Amid the whole world-welter of arbitrary customs, good bad and indifferent, the “naturalness” of the

THE INNUMERABLE INSTINCTS OF MAN

Christian code stands out like a rock. This body of "natural law" is considered by the Christian philosophers to be knowable by reason. It is therefore a law to which reason must add as knowledge advances. Hygienic measures, for example, once established as necessary to life become obligatory. The Christian has always to range his virtues alongside this law.

But is such a law, though given by reason, never sensed also by instinct? If it be the absolute law of human life, the law by which we flourish, will not any offence to it be sensed, be felt as somehow hard to bear, or repugnant? All know the difference between laws we feel to be essentially right—like that against killing the aged, or stealing; and laws (even trivial ones) which we know to be arbitrary, such as filling-up forms, or refusing drink to the thirsty at certain hours: petty annoyances that rasp men as with a file. And this is not because we never want to steal, or do not sometimes find it inconvenient to refrain from murder. There must be some instinctive element here, some inner recognition of the absolute harmony. It is hard to believe that on-lookers (till they become hardened) are not positively horrified by the sight of a human sacrifice—that no one feels any hurt when the Chinese girl-baby is put alive into a dry well.

Is it possible that the smallest deviation from naturalness can ever be made without a certain force, a certain harshness towards the voice within; and without, consequently, a loss of human happiness?

I should say that in "normalising the relations" between adult and child, Montessori is adding—in a

INSTINCT AND RELIGION

sense—to our knowledge of the natural law; just as Pasteur added to its application when he taught humanity the importance of drains, of cleanliness, of isolating infectious diseases—as measures already implied by the great commandment, “Thou shalt not kill.”

Certainly it is true that teachers in the old “rigid discipline” type of school had to trample under foot that natural tenderness and love for the child which it is the modern teacher’s greatest happiness to foster and to cherish in her heart. That this used to happen is so true that young teachers, fresh from the idealism of the training college, often gave up the profession—or had nervous breakdowns—rather than do themselves this violence. To this day, successful teachers are of a well-known lantern-jawed type visible from afar, and shunned by the sensitive even on holiday. This is a living example of that inward intuition which has to be smitten down violently, before any infringement can be made of the natural law.

CHAPTER XII

Emotion, Ceremony and Decoration

THIS brings us to the final question—emotion. To me it is a separate question which ought not to be treated of necessity along with instinct. But commonly it is so treated, and I should be asked questions if I said nothing here about it.

Fear is an emotion. Anger is an emotion. But there is something immediately obvious about these; something which distinguishes them at once from instinct. They are both responses to situation. A man leading a quiet life may go for years without feeling either.

But instinct always creates situation. It cannot be left out of the picture. It sets us our goals and leads us on. Instinct cannot fail to create motive. Yet we feel fear or anger only when the aims we seek are threatened.

This last is the important statement, and it is a very general one. It includes the aim of preserving one's life, for a man may be wishing to die and then if his life be threatened, he feels neither fear nor anger. Nor is fear normally induced merely by the threat to personal safety. A man can feel afraid when his wife is threatened, when his children are threatened, his home, his bank-balance, his ambitions—anything that he loves. In fact, he feels fear whenever his aims are threatened, whatever those aims may be.

The same can be said of anger. It only occurs when our rush forward is impeded by some obstacle. Some say that anger is felt only against human beings. But this is a confusion between logic and fact. It may be illogical to feel angry with any but those who deli-

berately frustrate our purposes; but the moment of frustration is just the one when logic is most surely dethroned. Listen to the hurried engineer when a nut refuses to budge! Anger is well known to stimulate the heart, and this lends power to our punch, or to our lungs, if punching, or shouting, be the actions indicated. But it does not (as an instinct would) give precise directions to the action. It does not tell us to punch with the left hand, or the right, or to avoid using the feet, for in some countries boxing is always done with the feet. It does not teach us to use a bomb, a bow-and-arrow, or poison.

In the same way fear does not first, or necessarily, inspire flight (as some psychologists hold). Although fear "lends wings to the feet," when running is the best manœuvre, it would not help the pilot of a falling 'plane had he to wrestle with an overmastering impulse to run. Yet they say in the flying corps that a pilot is a bad one who feels no fear whatever. It seems clear that all reactions are quickened by fear—provided it stops short of paralysis.

The fairly common view that fear ought to inspire flight, even if it doesn't, comes from the effort to derive every emotion from some specific instinct. Instinct leads to action; therefore the holders of this view are forced to find some action to correspond with each emotion. But this leads them to the dilemma that flight is very seldom the best action in situations that human beings have to face, and, to get over this, they say that instinctive actions can be "modified" by intelligence.

But why not shake ourselves entirely free from this

EMOTION, CEREMONY AND DECORATION

wholly doctrinaire belief that each instinct gives rise to a particular emotion? Surely it is plain that any of the instincts can give rise to any one of the emotions!

A miser can feel fear if his hoard is in danger, anger if it is stolen, grief if ruin is irretrievable, or joy if his loss is made good. Emotions come from any kind of tampering with our aims or ends; and it does not matter what instinct has given rise to those ends. The same thing happens if the ends themselves are abnormal. A psychiatrist once described the terror of a patient who came to him saying, "What shall I do? It is terrible. The water is cut off at the main!" She was suffering from a compulsion-neurosis which obliged her to be constantly taking a bath. The threat to the water-supply caused her to turn pale, tremble and sweat with fear.

An extraordinarily helpful clue to the whole psychology of emotion was once given by Edward Carpenter in a lecture which he entitled, *Rest*. I do not know if it was ever published.

He spoke of a guard's officer with whom he had been discussing the emotions of a cavalry-charge. This man said that when he was actually charging, he felt no emotions at all; he had a feeling of "rest." This sounds contradictory, but on these views it is quite easy to understand. Here was a man trained all his life to do a certain work. When he was doing that work he felt at peace. No emotions disturbed him. He was fulfilling his mission. No doubt if some trivial accident had prevented him from charging he would have been furious.

Emotions are like the swirling of a stream when it

THE INNUMERABLE INSTINCTS OF MAN

meets a rock. We move on silently to our ends, and in the absence of any obstacle no swirling is produced. "Still waters run deep," says the motto. That is to say, their stillness does not mean they are not moving.

Joy is the one exception. It is the sign of achievement; a sign that the end in view has been reached, or is being reached. But grief is the emotion of complete frustration; it means realisation that the end is un-
reachable. Psycho-analysts say that grief is really disappointment. Something anticipated has to be given up. And common experience certainly confirms this, for the grief felt for a young life is greater than the grief felt for an old one; the grief of a lover is deeper than any other grief, for it spells so many hopes unfulfilled; the grief of parent for child marks the end of so much vicarious ambition.

But if emotions are related more to ends than to specific instincts, it does not follow that they are less purposeful than instincts. Anger and fear are obviously useful, and it would be a strange exception to nature's usual economy if no purposes were served by the other emotions also. But what can be the purpose of grief? Like anger, or fear, it does not prompt to any specific action. That is left to intelligence. But it does contain a prompting. It demands imperiously that action shall be taken. Yet the action required in this case can only be interior. What is being asked for is, and can only be, psychic readjustment.

Persons of experience in dealing with the grief-stricken know, in fact, that they must be left very

EMOTION, CEREMONY AND DECORATION

much alone. Something similar is said by experienced doctors of the physical condition known as "collapse." Let the patient be, and he will come up from his collapse. Psychic re-adjustment means the re-attaching of the vital forces to other aims and objectives. It is an extensive interior work; the stream of life has to find new paths for itself, like water which will *carve* new channels round a dam. And no one can do this work but the sufferer. Too much interference by others can easily frustrate or impede it. For that reason grief dictates the impulse to retire, to be alone, to do nothing, to lie in a darkened room; and nothing could be more beneficial.

Some do this work more quickly than others. It depends very much on the philosophical outlook on life. It can even be done already before any disaster happens. There is such a thing as being prepared for the intrusion of death—not being surprised at it. In one of R. H. Benson's novels, a saintly old man is described whose prototype most of us have met. Unexpectedly, his only—and much loved—daughter is carried in dead from a hunting accident. He receives the event almost happily—at all events, with the amazing composure of the spiritual. But this is not indifference. It is pre-adjustment.

I was once present at a committee-meeting in a well-known political movement when the chairman—a man of no particular religious views, but universally respected for his wide human sympathies—received similar news. He went straight on with his work. It is often said (though I did not believe it till I saw it) that monks and nuns at a funeral of

THE INNUMERABLE INSTINCTS OF MAN

one of their number laugh and chat as one might at a picnic.

But whether adjustment is immediate, or made already, or still to be made, it does have to be carried out. Otherwise the individual remains unadjusted, and is always liable to tears. We all know the difference between the bereaved person in whose presence we have to be careful what we say and the one who makes us feel that it is safe to say anything.

All these facts point, therefore, to the conclusion that the emotion of grief is "an invitation to adjust" I suggest, therefore, that this is its mission, its biological purpose. Tears call up sympathy in others, who lend their aid, so far as aid can be given. Sometimes they talk too much, but that is due to ignorance; some say just the right thing, which is a help to philosophy. But sympathy can always be helpful, even if it leads only to making way for the sufferer, and to respecting his wish to be let alone. The wearing of black is more than a tribute to the departed. It means, "Let me alone, please I am recovering" Those needing this help, find it a real protection to wear mourning.

But if re-adjustment is needed when one of our hopes has had to be abandoned, the same is true when one of them has just been accomplished. Here, again, we have come to a full-stop. We have reached an end. The energies formerly kept busy by the aim must now go somewhere else. A new objective must be found to replace the old one.

This agrees with a phenomenon often observed, that it is not everyone who can "endure success";

EMOTION, CEREMONY AND DECORATION

some find it easier to endure failure! The released energies of the successful person may easily go the wrong way, fail to find a healthy focus. It is then said they "go to pieces."

Just as the physicist draws a distinction between energy and force, so the psychologist should draw a distinction between energy and instinct. Energies are there anyway—muscular energy, psychic energy—the energy that can go into creation, into thought. An instinct is not itself the energy which acts. It is merely one of the directives of that energy, one of the conditions which fix the direction in which it shall flow out. Reflexes, instincts and intelligence between them guide the outflow of energy, decide whether it shall go this way, or that. They are like the driver of a car, who steers it without putting forth any of the effort which moves it.

It follows that a man cannot achieve his life's ambition without having masses of energy still at his disposal. Otherwise he would be dead. But this energy has now lost its direction. He is like a chief-engineer who has just completed the building of a railway. All the men he was employing are now thrown out of work. They will have to find new employers.

So a man's energies, every time he achieves something—paints a picture, finishes writing a book, makes a fortune—will have to find new employers, new directors. In other words, new instinctive drives will have to take them over and utilise them.

Where are these to come from? Libido has to start searching round again. It has to fasten itself on fresh

objectives. New motives have to be born. This is bound to take a little time, unless the new work is there, ready to hand. When a man gets into Parliament, or is made a minister, his new duties take all his time. They replace the work he was doing before. The same happens when he marries. But he finds himself at "a loose end" every time he finishes a piece of creative work. In either case, the achievement of an end is accompanied by a certain emotion, the emotion of joy. He feels happy. After a bit he settles down to the new work, takes up anew the burdens, the groans and the struggling.

And what, now, is the purpose of this joy? It, like grief, marks a turbulation of the currents of life. And it seems to have struck few people that these two occasions of great internal work, the work of adjusting to adversity and the work of adjusting to success, are the two main occasions in life when men most often elect to stage a ceremony.

A funeral is a ceremony, a feast is a ceremony. Many writers have seen that ceremonial is somehow linked up with emotion—with the emotional crises of life. Some have called ceremony an "externalisation" of the emotion felt within, and obviously it serves no utilitarian purpose. It is sternly ruled out by those who put "reason first." Yet it creeps back. The same men who decline flowers at a funeral will invite some friends to lunch after a successful business deal. Joy, in fact, calls naturally for rejoicing, and rejoicing is better shared, and shared rejoicing leads to ceremony.

Does the ceremony, perhaps, "establish conditions" in which the emotion can have its full outlet? Is

EMOTION, CEREMONY AND DECORATION

there not some advantage in this general pause from constructive and workaday activities which actually favours, not just the emotion itself, but the object of the emotion; for may not the object of this emotion, too, be readjustment?

What has to happen on occasions of public rejoicing? Are these not occasions when everyone has to get used to a new situation? A war is just over, or a new king is proclaimed. Sentiment must re-establish itself round this new centre. That is an inner work which all must perform, for no one can readjust for another. Is it not aided by establishing conditions specially suited to it? At the moment of a coronation all seem to partake in the words of the sacred oath; some change has occurred inwardly in every man present—even in those distantly attentive to what was going on.

The Prince of Wales marries. All maidens in love with the Prince of Wales must renounce their hopes for ever. What a readjustment! The sentiment of matrons follows sympathetically the change in the man himself.

It seems that in the absence of a public ceremony everyone would remain unadjusted, or this inward change would have to manage itself in a hole-and-corner fashion, creep into the crevices of daily work, when and how it could. The public ceremony, instead, gives permission, gives the few moments of quiet and concentrated thought in which the change is possible. It facilitates the new national orientation.

Surely a funeral procession, burial rites, do the same thing for sorrow. These, too, are opportunities

THE INNUMERABLE INSTINCTS OF MAN

for thought, for collectedness, for resolution, for "facing-up," and so freeing one's self to take new paths and escape the danger of remaining "fixed in the past."

Ceremony becomes explicable directly we fix our eyes upon "inner work." Outer ceremony always means an inward writing on the soul. And just as men have a spontaneous tendency to decorate every object that stirs them deeply, so they have a tendency to decorate their ceremonies.

•Decoration itself is a kind of ceremony. It serves the same purpose. But what it celebrates is not an event, but a thing. It permits and invites mental work. It gives the mind an inducement, and an opportunity, to dwell on the sources of its happiness. We decorate a bride, a child, a loved kitten. What we are really saying is, "Look, isn't this a lovely kitten? Admire it with me!"

When a thought means very much to us we decorate the book containing it. We decorate a luncheon table.

Why do we no longer decorate our houses and cities? Because here the ruling authority is not the taste of the citizen, but the taste of the non-citizen, Mammon. Having surrendered the keys of civic beauty to the advertiser, the keen edge of our susceptibility has naturally become blunted. Custom inures one to almost anything.

CHAPTER XIII

The Transformation of Social Psychology

SOCIAL psychology, if the subject can be said truly to exist, has hitherto borne a somewhat pallid and doctrinaire aspect little related to practical affairs. One can read McDougall's classic book, "An Introduction to Social Psychology," without feeling any violent inducement to run out and alter some section of the social system. In fact, it gives very few indications as to what needs altering—its formulæ would fit all civilisations equally—and this circumstance alone could make one wonder whether it is really founded on psychology at all.

For social psychology ought really to be a highly explosive subject. If the simplest scientific discoveries, from the rotation of the earth onwards, have invariably had startling social repercussions, then any discovery relating to man himself should be still more disturbing. One is tempted to suspect that where there is no disturbance there has been no true discovery. But whether or not this be a valid test of the truth, the fact is that the present views cannot be applied to social psychology without that subject twisting in one's hand and becoming politics.

Scientifically gratifying though this may be, it is, from a publishing point of view, distinctly unfortunate. No one wants to write science and find himself called a politician. Scientific work has a sufficiently small sale anyway, without being boycotted by half the Press.

Nevertheless, a few pointers can perhaps safely be given—enough to show the kind of transformation that occurs.

* * * * *

THE INNUMERABLE INSTINCTS OF MAN

The object of good government is to produce happiness. But this is impossible unless one knows the laws of happiness—a psychological knowledge. Conversely, to know the laws of happiness is to be able to judge of the quality of government, to discriminate between the types of government one sees about one, the types one is offered.

Every further insight into happiness is therefore a step towards better government.

Now, the psychology of human happiness is the psychology of human instinct. Man is born to happiness, and this happiness flies away when instinct is defied—except in the one case when a freely acting individual, consciously and for heroic reasons, defies it in himself¹. But even then a certain kind of happiness perishes: it is merely replaced by another kind.

Because this is so, the happiness of each member of a community is very much wrapped up in the behaviour towards him of others. The freedom of an individual (in the only sense that makes sense) is his freedom to attain his happiness; whence it follows that the act of maximum charity towards another is to help him, or permit him, to do this.

The parent, or the teacher, who gives the child at each age the means of development appropriate to that age, and permission to use those means, is exerting towards that child the act of maximum charity. The government which gives to the maximum number of adults the means and the permission to form independent and self-determining homes, acts towards those people in the way in which it is most

¹ See Chapter IX.

• THE TRANSFORMATION OF SOCIAL PSYCHOLOGY

charitable for any government to act. Social custom has maximum charity towards youth when it makes vocation the guiding principle in the choice of a profession and love the guiding principle in the choice of a mate.

All these rules can be abrogated by societies, or by individuals, who do not understand them. Then unhappiness follows. A society may forget the cause of this unhappiness, it may forget that it was ever happy, or it may never have been happy. But when men who have been enjoying these things find themselves suddenly deprived of them, they feel a sense of injustice. Therefore it is that the "sense of justice," in its deepest roots, lies in the instincts: it is not something arbitrary or changeable, but it derives from the nature of man and from the laws of his life.

Nevertheless, men living in communities are constantly subject to "invasions" of their freedom in one or other of these great departments or in their minor sub-divisions and details.¹ For just as charity is a virtue so it may break down. In fact, each of these freedoms is a gift to the individual who enjoys it. The child cannot set himself free. He is dependent on the adult, so the adult alone can free him. The family cannot set itself free; only the state can guarantee to it its privileges. The freedom of everyone depends on the understanding, and on the goodwill, of someone else. To make a society harmonious and happy needs an all-round education and an all-round

¹ Such an invasion has been the drill-sergeant era of education, from which we are just emerging.

THE INNUMERABLE INSTINCTS OF MAN

achievement in the moral sphere: an achievement of guardianship of the happiness of others, which, in the last resort, is an achievement of love.

Love plus understanding: both are needed, and both must be widespread—or unhappiness results. For a community to be happy, it therefore follows that these principles must be incorporated in the social doctrine, the philosophy, or the religion of that community. They must be taught repeatedly, in those meeting-places, temples or churches, where this philosophy is kept alive.

Now, the instincts of man give him very little guidance as to how to treat other people. If he is free to trample on his own instincts, he is even more free to trample on those of others. It follows that the beliefs of man must have a determining part to play in the structure of society. What social psychology has therefore to contend with—it is the essential subject-matter for this science—is a kind of flux perpetually going on. a flowing here and there of philosophical currents among men.¹ Beneath these are the instincts, always fixed. Like an irregular floor to the ocean, they may have some influence on the currents above, but they are not by any means the sole causes of these currents. We might compare these shifting currents of opinion (which shape conduct, legislation, and the rest) to dyes of different colours injected from different points into a pool of water. Here one sees an invading patch swallowing

¹ As said before, this view fundamentally differentiates my treatment of social psychology from that of McDougall, who tries to make all his statements without reference to belief.

up others, there colours formerly separate are beginning to mingle. Translate this imagery into the doctrines, manners and codes of real men, study the changes in historic times of upheaval, and you have the basis for a real science, since it can be followed by observation.

Happiness is an unvarying clue, and whenever historical records speak of happiness one can be sure that there, and in those days, the prevailing philosophy of men brought their lives into harmony with man's instinctive pattern.

Just as misery in the school means a departure from instinct, and misery in the home means some distorting force—a domination, perhaps, of irrational kind—so misery in the State means a course set in defiance of those forces by which the human *psyche* determines its own cycle. Whenever a political, or religious, system is known to have made men happy, or the reverse, we can ask, "Which instincts did it set free and which repress?" So here would be another method of reading off the human instincts, as from a book.

But here I must stop. This child of mine would now wade straight into the heart of pressing political problems, and that is a luxury I cannot permit. On the other hand, the book of history lies ever open, like the book of nature, for anyone to read in it who wishes. I admit that these two books—like treacherous rocks—can rip the bottom out of many an earnestly held philosophy of life, but this (as I said at the beginning) is a penalty which every original explorer in science has to face. To look for the first time on nature herself requires less intellect than courage—

THE INNUMERABLE INSTINCTS OF MAN

which is, perhaps, why few scientists lead though many follow.

Permit me to conclude with a minor invocation: Long live human freedom, and especially the freedom of the human voice to make itself heard through a free Press.

Unfortunately, the freedom of the Press is also a freedom to suppress, so it does not appear that these two kinds of freedom are perfectly compatible. That also, I may observe, is a contribution to the study of social psychology.

